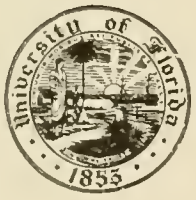
March 1978

UNIVERSITY
OF FLORIDA
LIBRARIES



University Archives
George A. Smathers Libraries
University of Florida

THE UNIVERSITY RECORD

University of Florida Undergraduate Catalog

1978 • 1979

Now that you have the University of Florida's undergraduate catalog, you might like help in using it. According to Webster, a catalog is a complete enumeration of things arranged systematically with descriptive detail. But to find exactly what you want to know it helps to know the system.

This undergraduate catalog is organized into three main sections. The first explains the University administration as it relates to the student; the second presents a description of the academic units, and the third section lists the course descriptions. Other information is provided including a calendar of critical dates at the front and a listing of faculty and administrators in the back. An index is placed at the end of the catalog.

In addition to general information about the University as a whole, the first section has specific details about admission, expenses, housing, academic regulations and student life.

A student at the University registers each quarter in one of 19 colleges or schools. The second section of the catalog explains the program in each of these academic units. Major fields of study, degrees offered, requirements for admission or graduation for this unit and other pertinent information are located here.

The second section should help the student determine an academic program for a bachelor's degree. Here you learn about the individual departments of the colleges, something of the philosophy on which the curriculum is based and the career or competence toward which this training is aimed.

The third section lists the actual courses and their descriptions. This part is set up alphabetically by departments of instruction. It tells you which undergraduate courses will be taught in each of the four quarters. This section is partially in a code (course prefix and number) which identifies the statewide course number and the University of Florida designation.

For example, ZOO 2011C is shorthand for the course Principles of Animal Biology. Following the title are the letters F, W, S, SS meaning it is offered in each of the quarters—Fall, Winter, Spring and Summer session. The course carries five credit hours. It lists as prerequisites ZOO 2010C (Introductory Zoology Laboratory) and CHM 2040 or CHM 2045C (General Chemistry), meaning they must be completed satisfactorily before registration for ZOO 2011C. A separate schedule of courses is printed each quarter and used in conjunction with the catalog during registration.

FOR ANSWERS TO THESE QUESTIONS:

"Could I be admitted?"	For admission requirements, refer to Admission section in general section and to your specific college section.
"How much does it cost?"	See Expenses in general section.
"Where can I live?"	Check Housing section.
"When do classes start? What about vacations?"	See University calendar and critical dates in front section.
"What programs are available? What courses can I take?"	Look at descriptions of colleges in second section. Check requirements for specific courses.
"Where can I find out about grades, probation and suspension?"	See academic regulations, general section.
"What could I major in and what degrees are offered?"	See college descriptions.
"What about financial aid?"	See student affairs in general section.
"What is special about the University of Florida?"	See Florida's First University page ix.

THE UNIVERSITY RECORD of the UNIVERSITY OF FLORIDA

The Undergraduate Catalog has been adopted as a rule of the University pursuant to the provisions of Chapter 120 of the Florida Statute. Addenda to the University Record Series, if any, are available upon request to the Office of the Registrar.

VOLUME LXXIII • SERIES 1 • NUMBER 1 • MARCH, 1978

PUBLISHED QUARTERLY BY THE UNIVERSITY OF FLORIDA, GAINESVILLE, FLORIDA ZIP CODE 32611 • OFFICE OF PUBLICATIONS, GAINESVILLE, FLORIDA • SECOND CLASS POSTAGE PAID AT GAINESVILLE, FLORIDA, 32601

TABLE OF CONTENTS

University Calendar v
Florida's First University ix
Board of Education x
Administrative Council of the University xi
General Information 1
Admissions 9
Expenses 15
Student Affairs 19
Housing 19
Student Life - Services, Facilities, Activities 23
Student Academic Regulations 27
Time Shortened Degree Opportunities 32
College, Schools, and Curricula
- University College 33
- School of Accounting 55
- College of Agriculture 59
- College of Architecture 71
- College of Arts and Sciences 79
- College of Business Administration 93
- College of Dentistry 99
- College of Education 101
- College of Engineering 113
- College of Fine Arts 131
- School of Forest Resources and Conservation 139
- College of Health Related Professions 143
- College of Journalism and Communications 153
- Center of Latin-American Studies 160
- College of Law 161
- College of Medicine 162
- College of Nursing 165
- College of Pharmacy 169
- College of Physical Education, Health, and Recreation 175
- College of Veterinary Medicine 183
- Military Department 185

Instructional Departments and Description of Courses . 187
Tables of Course Offerings 325
Staff and Faculty 375
Index 434

This public document was promulgated at a total cost of $32,057.16 or .534 per copy to inform students, parents, University faculty, and other interested persons of degree programs and curricula offerings at the University of Florida.

CALENDAR for 1978

JULY						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

CALENDAR for 1979

JANUARY						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MARCH						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

(CRITICAL DATES)

FALL TERM 1978

Registration	September 19-21
Classes Begin	September 25
Classes End	December 8
Final Examinations	December 11-16
Grades Due (Graduating Seniors)	December 14
Commencement	December 16
Grades Due (All)	December 18

WINTER TERM 1979

Registration	January 2
Classes Begin	January 3
Classes End	March 9
Final Examinations	March 12-17
Grades Due (Graduating Seniors)	March 15
Commencement	March 17
Grades Due (All)	March 19

SPRING TERM 1979

Registration	March 23
Classes Begin	March 26
Classes End	June 1
Final Examinations	June 4-9
Grades Due (Graduating Seniors)	June 7
Commencement	June 9
Grades Due (All)	June 11

SUMMER TERM 1979

Registration	June 15
Classes Begin	June 18
Classes End	August 17
Final Examinations	August 20-25
Grades Due (Graduating Seniors)	August 23
Commencement	August 25
Grades Due (All)	August 27

UNIVERSITY OF FLORIDA CALENDAR, 1978-79 FALL QUARTER

1978

March 1, Wednesday, 4:00 p.m.
Last day for beginning Freshmen students to file application for admission for the Fall Quarter. Students unable to meet this deadline may apply on a space available basis.

June 30, Friday, 4:00 p.m.
Last day for filing application at the Office of the Registrar to change college or division for the Fall Quarter.

July 28, Friday, 4:00 p.m.
Last day for those not previously in attendance or those previously in attendance at the University of Florida (except beginning Freshmen) to file application for admission for the Fall Quarter. Students unable to meet this deadline may apply on a space available basis.

September 1, Friday, 4:00 p.m.
Last day for clearing admissions for those whose applications were filed by above deadline. All credentials must have been received and college changes approved. Those who apply or clear after this date will be assigned late registration appointments.

September 19-21, Tuesday-Thursday
Orientation and registration according to appointments assigned. No one permitted to start registration on Thursday, September 21, after 3:00 p.m.

September 22, Friday
Drop/Add begins. Late registration begins. All students registering late subject to $25 late fee.

September 25, Monday—Classes begin.

UNIVERSITY OF FLORIDA CALENDAR, 1978-79

September 29, Friday, 4:00 p.m.
Last day for completing late registration for Fall Quarter. No one permitted to start registration on Friday, September 29, after 3:00 p.m.
Last day for Drop/Add and for changing sections. Students liable for fees for all hours for which registered.
Last day student may withdraw from the University and receive any refund of fees unless withdrawal is for medical or military reasons.
Last day for filing S-U option card in Registrar's Office.

October 2, Monday, 2:30 p.m.
Last day for paying fees without being subject to late fee of $25. Students must have correctly assessed fees and paid fees in full by this date.
Last day for filing address change in Registrar's Office, if not living in residence halls, in order to receive fee statement at new address.

October 13, Friday, 4:00 p.m.
Last day for filing degree application at the Registrar's Office for a degree to be conferred at the end of the Fall Quarter.
Last day to apply with the Registrar for an Associate of Arts certificate to be awarded at the end of the quarter.
Last day for removing grades of I or X received in the preceding term. If not made up, grade becomes E.
Last day for filing application at the Office of the Registrar to change college or division for the next quarter.

October 20-21, Friday-Saturday—Homecoming—All classes suspended Friday.

November 10, Friday—Veterans Day—Classes suspended.

November 22, Wednesday, 4:00 p.m.
Last day for dropping a course or withdrawing from the University without receiving failing grades in all courses.

November 23-24, Thursday - Friday — Thanksgiving — Classes suspended 10:00 p.m. November 22.

November 27, Monday, 8:00 a.m.—Classes resume.

December 1, Friday, 10:00 p.m.
No examinations, class quizzes or progress tests may be given after this date and prior to the final examination period.

December 8, Friday—All classes end.

December 11, Monday
Final examinations begin. Assembly examinations begin Saturday, December 9.

December 14, Thursday, 10:00 a.m.—Degree candidates' grades due.

December 15, Friday, 3:00 p.m.
Report of colleges on degree candidates due in the Office of the Registrar.

December 16, Saturday—Commencement Convocation.

December 18, Monday, 9:00 a.m.
All grades for Fall Quarter due in the Office of the Registrar.

UNIVERSITY OF FLORIDA CALENDAR, 1978-79 WINTER QUARTER

1978

November 9, Thursday, 4:00 p.m.
Last day for those not previously in attendance or those previously in attendance at the University of Florida to file application for admission for the Winter Quarter. Students unable to meet this deadline may apply on a space available basis.

December 8, Friday, 4:00 p.m.
Last day for clearing admissions for those whose applications were filed by above deadline. All credentials must have been received and college changes approved. Those who apply or clear after this date will be assigned late registration appointments.

1979

January 2, Tuesday
Registration according to appointments assigned. No one permitted to start registration on Tuesday, January 2, after 3:00 p.m.

January 3, Wednesday
Classes begin. Drop/Add begins. Late registration begins. All students registering late subject to $25 late fee.

January 9, Tuesday, 4:00 p.m.
Last day for completing late registration for Winter Quarter. No one permitted to start registration on Tuesday, January 9, after 3:00 p.m.
Last day for Drop/Add and for changing sections. Students liable for fees for all hours for which registered.
Last day student may withdraw from the University and receive any refund of fees unless withdrawal is for medical or military reasons.
Last day for filing S-U option card in Registrar's Office.

January 10, Wednesday, 2:30 p.m.
Last day for paying fees without being subject to late fee of $25. Students must have correctly assessed fees and paid fees in full by this date.
Last day for filing address change in the Registrar's Office, if not living in residence halls, in order to receive fee statement at new address.

January 19, Friday, 4:00 p.m.
Last day for filing application at the Office of the Registrar to change college or division for the next quarter.
Last day for filing degree application at the Registrar's Office for a degree to be conferred at the end of the Winter Quarter.
Last day to apply with the Registrar for an Associate of Arts certificate to be awarded at the end of the quarter.

January 26, Friday, 4:00 p.m.
Last day for removing grades of I or X received in the preceding term. If not made up, grade becomes E.

February 23, Friday, 4:00 p.m.
Last day for dropping a course or withdrawing from the University without receiving failing grades in all courses.

March 2, Friday, 10:00 p.m.
No examinations, class quizzes or progress tests may be given after this date and prior to the final examination period.

March 9, Friday—All classes end.

March 12, Monday
Final examinations begin. Assembly examinations begin Saturday, March 10.

March 15, Thursday, 10:00 a.m.—Degree candidates' grades due.

March 16, Friday, 3:00 p.m.
Report of colleges on degree candidates due in the Office of the Registrar.

March 17, Saturday—Commencement Convocation.

March 19, Monday, 9:00 a.m.
All grades for Winter Quarter due in the Office of the Registrar.

UNIVERSITY OF FLORIDA CALENDAR, 1978-79 SPRING QUARTER

1979

February 16, Friday, 4:00 p.m.
Last day for those not previously in attendance or those previously in attendance at the University of Florida to file application for admission for the Spring Quarter. Students unable to meet this deadline may apply on a space available basis.

March 9, Friday, 4:00 p.m.
Last day for clearing admissions for those whose applications were filed by the above deadline. All credentials must have been received and college changes approved. Those who apply or clear after this date will be assigned late registration appointments.

March 23, Friday
Registration according to appointments assigned. No one permitted to start registration on Friday, March 23, after 3:00 p.m.

March 26, Monday
Classes begin. Drop/Add begins. Late registration begins. All student registering late subject to $25 late fee.

March 30, Friday, 4:00 p.m.
Last day for completing late registration for Spring Quarter. No one permitted to start registration on Friday, March 30, after 3:00 p.m.
Last day for Drop/Add and for changing sections. Students liable for fees for all hours for which registered.
Last day student may withdraw from the University and receive any refund of fees unless withdrawal is for medical or military reasons.
Last day for filing S-U option card in Registrar's Office.

April 2, Monday, 2:30 p.m.
Last day for paying fees without being subject to late fee of $25. Student must have correctly assessed fees and paid fees in full by this date.
Last day for filing address change in the Registrar's Office, if not living in residence halls, in order to receive fee statement at new address.

April 13, Friday, 4:00 p.m.
Last day for filing application at the Office of the Registrar to change college or division for the next quarter.
Last day for filing degree application at the Registrar's Office for a degree to be conferred at the end of the Spring Quarter.
Last day to apply with the Registrar for an Associate of Arts certificate to be awarded at the end of the quarter.

April 20, Friday, 4:00 p.m.
Last day for removing grades of I or X received in preceding term. If not made up, grade becomes E.

May 18, Friday, 4:00 p.m.
Last day for dropping a course or withdrawing from the University without receiving failing grades in all courses.

May 25, Friday, 10:00 p.m.
No examinations, class quizzes or progress tests may be given after this date and prior to the final examination period.

May 28, Monday—Memorial Day—Classes suspended.

June 1, Friday—All classes end.

June 4, Monday
Final examinations begin. Assembly examinations begin Saturday, June 2.

June 7, Thursday, 10:00 a.m.—Degree candidates' grades due.

June 8, Friday, 3:00 p.m.
Final report of colleges on degree candidates due in the Office of the Registrar.

June 9, Saturday—Commencement Convocation.

June 11, Monday, 9:00 a.m.
All grades for Spring Quarter due in the Office of the Registrar.

UNIVERSITY OF FLORIDA CALENDAR, 1978-79 SUMMER QUARTER

1979

May 4, Friday, 4:00 p.m.
Last day for those not previously in attendance or those previously in attendance at the University of Florida to file application for admission for the Summer Quarter. Students unable to meet this deadline may apply on a space available basis.

June 1, Friday, 4:00 p.m.
Last day for clearing admissions for those whose applications were filed by the above deadline. All credentials must have been received and college changes approved. Those who apply or clear after this date will be assigned late registration appointments.

June 15, Friday
Registration according to appointments assigned. No one permitted to start registration on Friday, June 15, after 3:00 p.m.

June 18, Monday
Classes begin, Drop/Add begins. Late registration begins. All students registering late subject to $25 late fee.

June 22, Friday, 4:00 p.m.
Last day for completing late registration for Summer Quarter. No one permitted to start registration on Friday, June 22, after 3:00 p.m.
Last day for Drop/Add and for changing sections. Students liable for fees for all hours for which registered.
Last day student may withdraw from the University and receive any refund of fees unless withdrawal is for medical or military reasons.
Last day for filing S-U option card in Registrar's Office.

June 25, Monday, 2:30 p.m.
Last day for paying fees without being subject to late fee of $25. Student must have correctly assessed fees and paid fees in full by this date.
Last day for filing address change in Registrar's Office, if not living in residence halls, in order to receive fee statement at new address.

July 4, Wednesday—Independence Day—Classes suspended.

July 6, Friday, 4:00 p.m.
Last day for filing application at the Office of the Registrar to change college or division for the next quarter.
Last day for filing degree application at the Registrar's Office for a degree to be conferred at the end of the Summer Quarter.
Last day to apply with the Registrar for an Associate of Arts certificate to be awarded at the end of the quarter.

July 13, Friday, 4:00 p.m.
Last day for removing grades of I or X received in preceding term. If not made up, grade becomes E.

July 20, Friday—Last day of Special Five-Week Summer course offerings.

July 30, Monday, 9:00 a.m.
All grades for Special Five-Week Summer course offerings due in the Office of the Registrar.

August 3, Friday, 4:00 p.m.
Last day for dropping a course or withdrawing from the University without receiving failing grades in all courses.

August 10, Friday, 10:00 p.m.
No examinations, class quizzes or progress tests may be given after this date and prior to the final examination period.

August 17, Friday—All classes end.

August 20, Monday
Final examinations begin. Assembly examinations begin Saturday, August 18.

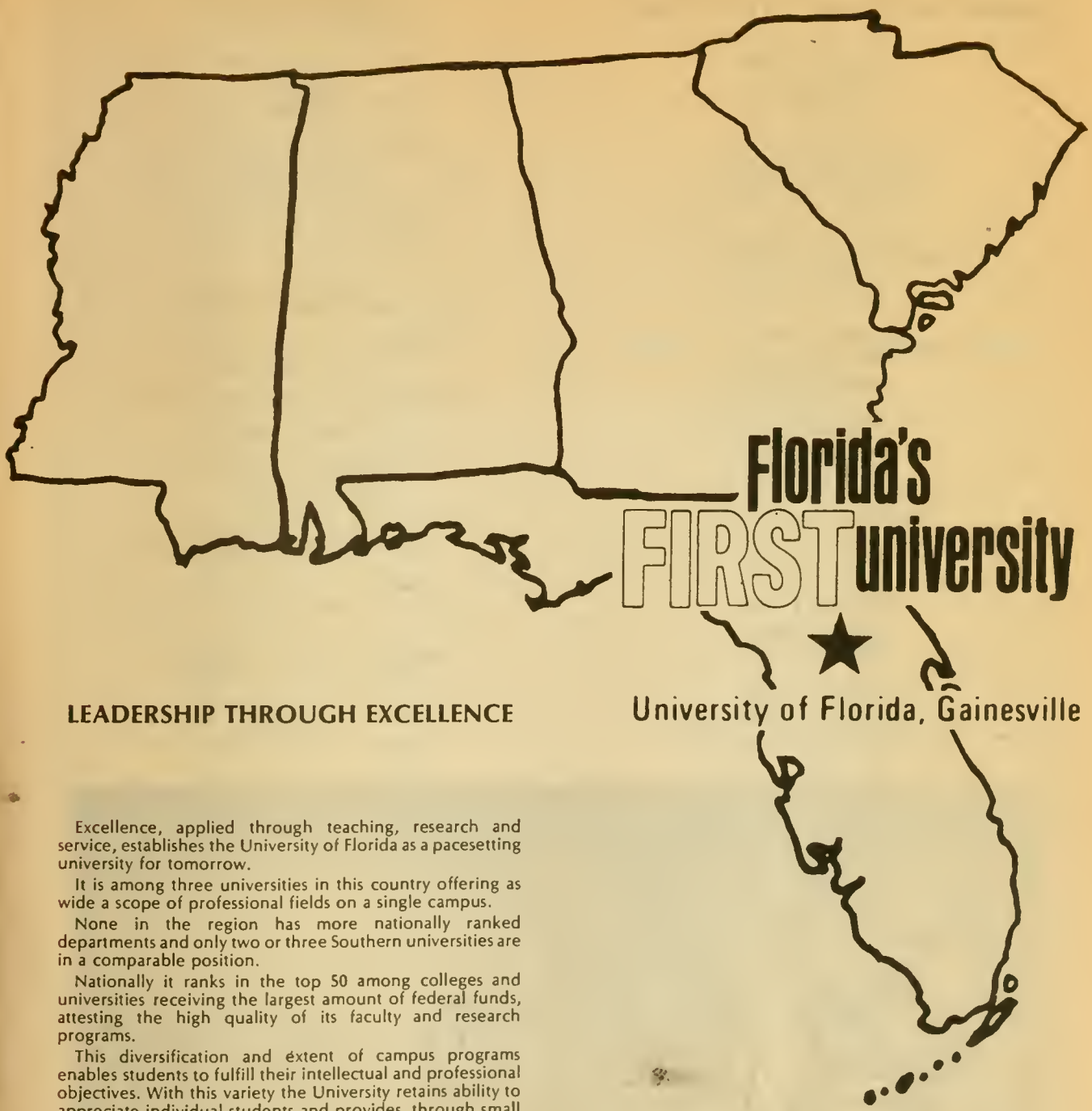
August 23, Thursday, 10:00 a.m.—Degree candidates' grades due.

August 24, Friday, 3:00 p.m.
Report of colleges on degree candidates due in the Office of the Registrar.

August 25, Saturday—Commencement Convocation.

August 27, Monday, 9:00 a.m.
All grades for Summer Quarter due in the Office of the Registrar.

Coca-Cola



LEADERSHIP THROUGH EXCELLENCE

Excellence, applied through teaching, research and service, establishes the University of Florida as a pacesetting university for tomorrow.

It is among three universities in this country offering as wide a scope of professional fields on a single campus.

None in the region has more nationally ranked departments and only two or three Southern universities are in a comparable position.

Nationally it ranks in the top 50 among colleges and universities receiving the largest amount of federal funds, attesting the high quality of its faculty and research programs.

This diversification and extent of campus programs enables students to fulfill their intellectual and professional objectives. With this variety the University retains ability to appreciate individual students and provides, through small classes and advisement, the means to express their special talents and interests.

Undergraduates have the broadening experience of association within a university where the main professional fields, plus arts and sciences, are represented by undergraduate and graduate studies with research opportunity immediately available. A strength of the University is that its students range from Freshmen to Ph.D. candidates and professional postdoctorates.

The University of Florida is among 52 Carnegie Commission's top ranking Category 1 research-graduate institutions. Thus, this gives the undergraduate student a decided advantage. He may be taught by a research professor of international renown, interact with graduate students in some courses, and work in a major library designed for advanced instruction and research.

With the breadth of educational and research programs, opportunity for interdisciplinary effort and learning — students and faculty investigators working together using each others' experience and knowledge — the University is unlimited in its potential for service. Direct assistance to segments of society by generating and applying knowledge to solve current problems is an area of unique capability of the University in serving the needs of the state and nation.

A statewide university, the University of Florida is a comprehensive institution of exceptional quality. Florida's FIRST University, focusing its resources on solutions for tomorrow.

BOARD OF EDUCATION
UNIVERSITY OF FLORIDA

FLORIDA STATE BOARD OF EDUCATION

REUBIN ASKEW
Governor
State of Florida

JAMES WILLIAMS
Lieutenant Governor
State of Florida

BRUCE SMATHERS
Secretary of State
State of Florida

ROBERT SHEVIN
Attorney General
State of Florida

BILL GUNTER
State Treasurer
State of Florida

RALPH TURLINGTON
Commissioner of Education
State of Florida

GERALD LEWIS
Comptroller
State of Florida

DOYLE CONNER
Commissioner of Agriculture
State of Florida

BOARD OF REGENTS

JAMES J. GARDENER, M.S.
Chairman
Ft. Lauderdale, Florida

JACK MCGRIFF, M.A.
Vice Chairman
Gainesville, Florida

MARSHALL M. CRISER, J.D.
Palm Beach, Florida

J. J. DANIEL, LL.B.
Jacksonville, Florida

MURRAY H. DUBBIN, LL.B.
Miami, Florida

CHESTER H. FERGUSON, LL.B.
Tampa, Florida

WILLIAM L. MALOY, Ed.D.
Pensacola, Florida

JAMES C. SMITH, J.D.
Tallahassee, Florida

BETTY A. STATEN, B.S.
Orlando, Florida

STATE UNIVERSITY SYSTEM

E. T. YORK, JR., Ph.D.
Chancellor
State University System

ADMINISTRATIVE COUNCIL OF THE UNIVERSITY

ROBERT Q. MARSTON, M.D.
President
JOHN A. NATTRESS, Ph.D.
Acting Executive Vice President
ROBERT ARMISTEAD BRYAN, Ph.D.
Vice President for Academic Affairs
WILLIAM EARL ELMORE, B.S. C.P.A.
Vice President for Administrative Affairs
C. ARTHUR SANDEEN, Ph.D.
Vice President of Student Affairs
KENNETH RAY TEFERTILLER, Ph.D.
Vice President for Agricultural Affairs
GEORGE STEVEN WILKERSON, B.A.
Vice President for Alumni & Development
KENNETH FRANKLIN FINGER, Ph.D.
Acting Vice President for Health Affairs
GENE WILLARD HEMP, Ph.D.
Associate Vice President for Academic Affairs
DON L. ALLEN, M.S., D.D.S.
Dean of the College of Dentistry
CLIFFORD ALLEN BOYD, Ed.D.
Dean of the College of Physical Education, Health and Recreation
CHARLES BENTON BROWNING, Ph.D.
Dean for Resident Instruction, Institute of Food and Agricultural Sciences
WAYNE H. CHEN, Ph.D.
Dean of the College of Engineering
CHARLES EDWARD CORNELIUS, Ph.D.
Dean of the College of Veterinary Medicine
WILLIAM B. DEAL, M.D., Ph.D.
Acting Dean of the College of Medicine
HARRY ALLEN GRATER, Ph.D.
Acting Dean of University College
MARK T. JAROSZEWICZ, M. ARCH.
Dean of the College of Architecture
JOSEPH RICHARD JULIN, LL.B.
Dean of the College of Law
JAMES W. KNIGHT
Acting Dean of Academic Affairs for Continuing Education
RONALD F. LABISKY, Ph.D.
Acting director of the School of Forest Resources and Conservation
ROBERT FRANKLIN LANZILLOTTI, Ph.D.
Dean of the College of Business Administration
RALPH L. LOWENSTEIN, Ph.D.
Dean of the College of Journalism and Communications
JOSEPH SABATELLA, M.F.A.
Dean of the College of Fine Arts
MICHAEL A. SCHWARTZ, Ph.D.
Dean of Pharmacy
BERT LAVON SHARP, Ed.D.
Dean of the College of Education
HARRY HALL SISLER, Ph.D.
Dean of the Graduate School
HOWARD K. SUZUKI, Ph.D.
Dean of the College of Health Related Professions
BLANCHE I. UREY, Ed.D.
Dean of the College of Nursing
CALVIN ANTHONY VANDERWERF, Ph.D.
Dean of the College of Arts and Sciences
JOHN THEODORE WOESTE, Ph.D.
Dean for Extension, Institute of Food and Agricultural Sciences
F. ALOYSIUS WOOD, Ph.D.
Dean of Research, Institute of Food and Agricultural Sciences

ELECTED REPRESENTATIVES OF THE FACULTY

P. JOSEPH WITTMER, Ph.D.
Professor of Education
MICHAEL W. GORDON, J.D. (Alt.)
Professor of Law
SUZANNE M. KINZER
Associate Professor of General Teacher Education
DANNY R. MINNICK, Ph.D.
Associate Professor, IFAS (Alt.)
MARILYN S. FREGLY, Ph.D.
Assistant Professor of Behavioral Studies
MICHAEL E. WARREN, Ph.D. (Alt).
Assistant Professor of Electrical Engineering

REPRESENTATIVES OF THE STUDENT BODY

PAUL LEINO
President of the Student Body
RICK SHARP
President of Student Senate
GARY GUNTER
Vice President of the Student Body

PRESIDENTIAL APPOINTEES

JAMES C. ALLISON
Affirmative Action Coordinator
THOMAS SANFORD BIGGS, JR., LL.B.
University Attorney
FRED HILTON CANTRELL, B.S.B.A.
Director, University Relations
THOMAS WINSTON COLE, Ed.D.
Dean, Academic Affairs
HUGH W. CUNNINGHAM, JR., M.A.
Director, University Information & Press Secretary to President
JOSHUA CLIFTON DICKINSON, JR., Ph.D.
Director of the Florida State Museum
DALLAS FOX, M.S.A.
Associate Director, Division of Planning and Analysis
JOHN A. SMITHERMAN, M.S.
Coordinator, ROTC
THOMAS G. GOODALE, Ph.D.
Dean of Student Services
SAMUEL RAY GRAVES
Director, Intercollegiate Athletics
GUSTAVE ADOLPHUS HARRER, Ph.D.
Director of University Libraries
GAIL W. MELTON
Special Assistant to the President
LOUIS V. VOYLES, B.A.
University Registrar

ASSOCIATE MEMBERS

JOHN E. IVES, M.S.
Director of Shands Teaching Hospital
ROGER KENNEDY
President of the University of Florida Alumni Association
J. MALCOLM RANDALL, M.H.A.
Director of the Veterans Administration Hospital

HISTORICAL NOTE

The University of Florida is a combined state University and land-grant college located in the northern center of the State. While its beginnings go back to the days previous to Florida's admission to the Union in 1845, its first college — the College of Arts and Sciences — did not open until 1853. A few years later the passage of the Morrill Act provided lands for state institutions of higher learning which would promote agriculture, mechanical arts and military science, resulting in the beginnings of the College of Agriculture, the College of Engineering, and the Agricultural Experiment Station.

By 1905 there were a half-dozen state-supported institutions of higher learning in Florida, located in various parts of the State and struggling for existence. At that time the Florida Legislature took a step unprecedented in the history of education in any state by passing the Buckman Act, which abolished the six State Colleges and provided for the establishment of two new institutions, of which the University of Florida was one. It was established for men, at Gainesville and placed under the direction of the Board of Control, a body created by the Buckman Act. The seven members of the board represented the seven geographical sections of the state, and served without compensation, except for travel and incidental expense incurred in the performance of duty. In 1947 the University was made coeducational. The nine-member Board of Regents replaced the Board of Control in 1965.

SETTING AND ENVIRONMENT

The University of Florida is located in Gainesville, a city of 76,261, situated in north central Florida, midway between the Atlantic Ocean and Gulf of Mexico. The city is known as an agricultural and small industrial center.

In addition to a moderate climate, Gainesville offers many other advantages to students of the University. A golf course is within easy reach of the campus, and swimming and boating accommodations are available at nearby springs and rivers. The lakes in the vicinity abound in fresh water fish, while the Atlantic Ocean and the Gulf of Mexico are within a two hours' drive. As the seat of Alachua County, the city is the focal point of diversified industrial and farming activities.

Practically every religious denomination is represented in the Gainesville area including: Presbyterian, Baptist, Lutheran, Methodist, Catholic, Episcopal, Christian, Seventh Day Adventist, Church of Christ Scientist, Church of Christ, Christian and Missionary Alliance, Advent Christian, B'nai Israel, Church of Latter Day Saints, Church of the Nazarene, Assembly of God, Apostolic Church of Christ, Church of God, Disciples of Christ, Pentecostal Holiness, United Church of Christ, and Unitarian-Universalists. Several of these denominations maintain chapels adjacent to the campus. These include St. Augustine Chapel (Catholic Student Center), the Baptist Student Union, Wesley Foundation (Methodist Student Center), Chapel of the Incarnation (Episcopal Student Center), Church of Christ, B'nai B'rith Hillel Foundation (Jewish), the Lutheran Student Association, the Latter Day Saints (Mormon), Disciples-Presbyterian Student Center and the Society of Friends (Quaker). All the chapels carry on extensive programs of vital interest to University students.

TRANSPORTATION

A schedule of daily bus service, with connections to all points of the United States, is maintained by Southeastern Greyhound Lines and Trailways Bus System. Eastern Airlines serves Gainesville with daily flights with connections to all parts of the U.S. Charter Air and Air Florida serve all major areas of the state.

GOVERNMENT OF THE UNIVERSITY

Direct supervision over the University of Florida, its policies and affairs, is vested in the Board of Regents, a body composed of nine citizens from different regions of the state who are appointed by the Governor for nine-year terms. University affairs are administered by the president with the advice and assistance of the Administrative Council. The legislative body of the University is the University Senate.

ADMINISTRATIVE AFFAIRS

THE VICE PRESIDENT FOR ADMINISTRATIVE AFFAIRS is the chief business officer of the University. He is responsible for establishing policy relating to university business matters; coordinating the preparation of and control of the operating budget; collecting and disbursing funds in accordance with state statutes; managing campus security, auxiliary services and the maintenance of the physical plant and grounds; directing purchasing, the administrative computer, staff personnel and property control, and environmental health and safety.

ACADEMIC AFFAIRS

THE VICE PRESIDENT FOR ACADEMIC AFFAIRS is the chief academic officer for the University. In this capacity he supervises the allocation of resources in the academic areas, the improvement of instruction, the correlation of instructional activities, the development and improvement of research activities, the evaluation of university academic activity, and the establishment of policy with respect to employment, promotion, and tenure of the academic staff. In the absence of the President and Executive Vice President he acts with the authority and responsibility of the President.

QUARTER SYSTEM

The University of Florida operates on a quarter system. In a twelve-month year there are four quarters running from September through August, averaging ten weeks of class instruction. Courses are scheduled in such a way that a student may enter the University at any quarter and proceed normally through an appropriate sequence of courses. Quarters begin in September, January, March and June.

COLLEGES AND SCHOOLS

THE COLLEGE OF AGRICULTURE, a unit of the Institute of Food and Agricultural Sciences, offers curricula in all of the major fields of agriculture and grants the degree of Bachelor of Science in Agriculture. See Page 59.

THE COLLEGE OF ARCHITECTURE offers curricula in architecture, interior design, landscape architecture and building construction. It confers the degrees of Bachelor of Design, Bachelor of Landscape Architecture, and Bachelor of Building Construction. See Page 71.

THE COLLEGE OF ARTS AND SCIENCES offers curricula leading to degrees of Bachelor of Arts and Bachelor of Sciences, with opportunities for specializing in many science and liberal arts fields. It offers the courses in mathematics, biological sciences, physical sciences, social sciences and humanities required in the curricula of the professional colleges. See Page 79.

THE COLLEGE OF BUSINESS ADMINISTRATION offers curricular programs leading to the degree of Bachelor of Science in Business Administration. See Page 93.

THE COLLEGE OF DENTISTRY, an integral part of the J. Hillis Miller Health Center, graduated its first students in June, 1976. The College offers an innovative modular curriculum leading to the degree of Doctor of Dental Medicine and has initiated post-graduate programs in various dental specialities. See Page 99.

THE COLLEGE OF EDUCATION has curricula in elementary and secondary school instruction leading to the degrees of Bachelor of Science in Education or Bachelor of Arts in Education. It also provides an inservice program for the teachers of the state. The P.K. Yonge Laboratory School, a unit of the College of Education, enrolls pupils from the kindergarten through the secondary school. Undergraduate

teacher preparation programs are NCATE approved and lead to certification at pre-school, elementary, and secondary levels in Florida and thirty other states where NCATE standards provide the basis for reciprocal agreements. See Page 101.

THE COLLEGE OF ENGINEERING offers curricula leading to the degree of Bachelor of Science in Chemical Engineering, in Civil Engineering, in Electrical Engineering, in Industrial Engineering, and in Mechanical Engineering. The Bachelor of Science in Engineering is awarded with majors in Aerospace Engineering, Agricultural Engineering, Ceramic Engineering, Engineering Sciences, Metallurgical Engineering, Nuclear Engineering, and Systems Engineering. The Bachelor of Science degree is awarded with majors in Computer and Information Sciences, Environmental Engineering Sciences, Nuclear Engineering Sciences, and Interdisciplinary Engineering Studies. The college also offers the Bachelor of Engineering Technology degree with a major in metals joining, and the Bachelor of Land Surveying degree. See page 113.

THE COLLEGE OF FINE ARTS offers curricula in the studio arts, history of art, crafts, graphic design, art education, music, music education, and theatre, and confers the degrees Bachelor of Design, Bachelor of Arts in Art, Bachelor of Fine Arts, Bachelor of Music, Bachelor of Music Education and Master of Fine Arts. See Page 131.

THE SCHOOL OF FOREST RESOURCES AND CONSERVATION is a unit of the Institute of Food and Agricultural Sciences. The School offers majors in the professional disciplines of Forestry, Range Ecosystem Management, Wildlife Ecology, and an interdisciplinary major in Resource Conservation. See Page 139.

THE GRADUATE SCHOOL offers programs leading to the degrees of Doctor of Philosophy in 56 fields; Doctor of Education, Specialist in Education, Engineer, Master of Agriculture, Master of Agricultural Management and Resource Development, Master of Arts, Master of Arts in Architecture, Master of Arts in Education, Master of Arts in Health Education, Master of Arts in Journalism and Communications, Master of Arts in Physical Education, Master of Arts in Teaching, Master of Arts in Urban and Regional Planning, Master of Building Construction, Master of Business Administration, Master of Education, Master of Engineering, Master of Fine Arts, Master of Forest Resources and Conservation, Master of Health Education, Master of Laws in Taxation, Master of Health Science, Master of Nursing, Master of Physical Education, Master of Science, Master of Science in Building Construction, Master of Science in Nursing, Master of Science in Pharmacy, Master of Science in Statistics, Master of Science in Teaching, and Master of Statistics. All instruction is carried on by the faculties of the colleges and schools listed here.

THE COLLEGE OF HEALTH RELATED PROFESSIONS, a unit of the J. Hillis Miller Health Center, offers curricula leading to a Bachelor of Health Science in Allied Health, Bachelor of Health Science in Clinical and Community Dietetics, Bachelor of Health Science in Medical Technology, Bachelor of Health Science in Occupational Therapy, and a Bachelor of Health Science in Physical Therapy. The College also offers a curriculum leading to the degree of Master of Health Science in Occupational Therapy, Master of Health Science in Rehabilitation Counseling, and a Ph.D. specializing in clinical psychology. See Page 143.

THE COLLEGE OF JOURNALISM AND COMMUNICATIONS offers curricula leading to the degree of Bachelor of Science in Journalism, Bachelor of Science in Advertising, and Bachelor of Science in Broadcasting. It offers sequences in public relations, technical communication and criminal justice public relations.

There are areas of specialization in reporting, editing, photojournalism, journalism education, broadcast news and public affairs, film production, and broadcast production. See Page 153.

THE COLLEGE OF LAW offers a curriculum leading to the degree of Juris Doctor and a graduate program in taxation leading to the degree Master of Laws. See Page 161.

THE COLLEGE OF MEDICINE, a unit of J. Hillis Miller Health Center, offers a curriculum leading to the professional degree of Doctor of Medicine. Ph.D. degrees in basic medical sciences are offered through the Graduate School. A special medical scientist training program leading to the combined degree of Doctor of Medicine-Doctor of Philosophy is available jointly through the College of Medicine and the Graduate School. A Bachelor of Science in medicine degree is offered to undergraduate students enrolled in the Physicians Assistant Program. See Page 162.

THE COLLEGE OF NURSING, a unit of the J. Hillis Miller Health Center, offers a curriculum leading to the Bachelor of Science in Nursing degree. The College also offers a curriculum leading to the Master of Nursing degree or a Master of Science in Nursing degree. See Page 165.

THE COLLEGE OF PHARMACY, a unit of the J. Hillis Miller Health Center, offers a curriculum leading to the degree of Bachelor of Science in Pharmacy. In addition the degree Doctor of Pharmacy (Pharm.D.) is offered. M.S. and Ph.D. degrees are offered in pharmaceutical sciences through the Graduate School. See Page 169.

THE COLLEGE OF PHYSICAL EDUCATION, HEALTH, AND RECREATION offers services and programs through the departments of General Physical Education, Professional Physical Education, Health Education and Safety, and Recreation. The department of General Physical Education provides programs for university students other than majors. The departments of Professional Physical Education, Health Education and Safety, and Recreation offer professional preparation programs leading to undergraduate degrees in physical education, health education, and recreation. Professional areas of preparation include: teachers of physical education or health education, health educators for public or voluntary agencies, and recreation directors. See Page 175.

THE UNIVERSITY COLLEGE is the academic home for Freshmen and Sophomores while they prepare for admission to one of the other colleges. It provides courses in general education and awards the Associate of Arts Certificate. See Page 33.

THE COLLEGE OF VETERINARY MEDICINE, a teaching unit of the J. Hillis Miller Health Center, offers a curriculum leading to the professional degree of Doctor of Veterinary Medicine. See Page 183.

DIVISION OF CONTINUING EDUCATION

During the last year more than 32,000 people took advantage of the many University sponsored opportunities made available through the Division of Continuing Education. More than 25,000 people participated in non-credit conferences, workshops, institutes and seminars. More than 5,297 students enrolled in Independent Study by Correspondence courses (both credit and non-credit). Over 1,300 students studied in credit extension classes throughout the State. Additionally, three international programs were offered through this Division last year. Backed by the resources of the University, the Division of Continuing Education sees the State as its campus and the people as its student body.

SPECIAL INSTRUCTIONAL UNITS SERVING ALL COLLEGES AND SCHOOLS

THE INTERCOLLEGE DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES. During the last two decades electronic information processing machines with capability many orders of magnitude beyond their predecessors have come into being. Though still in their infancy they are already extending man's capability to solve problems in every field of human activity. Against this background, the organization

of a curriculum dedicated to a broad sector of human endeavor was necessary. Toward this end the Intercollege Department of Computer and Information Sciences was created in 1971. The department currently offers degree programs in the College of Arts and Sciences, Business Administration, Engineering and an area of specialization in the technical communications degree program in the College of Journalism and Communications. Degree programs within other colleges are under study.

Subject areas found within the CIS curricula are concerned with representations and transformations of information structures and with theoretical models for such representations and transformations. In addition the computer or information scientist is concerned with systems having the ability to transform information and with the methodologies derived from broad areas of applications having common structures, processes and techniques. This prepares the student for a wide range of careers in the business, industrial, scientific, civic and academic worlds wherein information flow and analysis is of critical importance to decision making.

In addition to the degree programs, several service courses are available for those who need experience in computer applications for proper career preparation. For further information, contact the CIS department office in 512 Weil Hall.

THE CENTER FOR LATIN AMERICAN STUDIES is the University unit responsible for directing or coordinating interdisciplinary instructional and research programs related to the Latin American area. It is a budgeted unit within the University and is administered by a Director immediately responsible to the Vice President for Academic Affairs.

The Center sponsors conferences, publishes the results of scholarly research related to Latin America, and cooperates with other University units in overseas development and training programs. It administers a program with Universidad de los Andes, Bogota, Colombia and a program with the Centro Unificabo Professional in Rio de Janeiro, Brazil for the State University System and offers programs in Latin American Studies leading to a B.A. degree, and B.S., M.A. and Ph.D. Certificates in Latin American Studies; an interdisciplinary Master of Arts in Latin American Studies; and, a M.A. and Ph.D. Certificate in Latin American Demographic Studies.

THE DEPARTMENT OF MUSIC has the responsibility for such musical organizations as the University Bands, Orchestras, Choruses, and Glee Clubs, and offers courses in the following areas: (1) Theory of Music, (2) History and Literature, (3) Applied Music, (4) Church Music, (5) Music Education, and (6) Ensemble Music.

THE DEPARTMENT OF MILITARY SCIENCE offers the four year program and the two year program of Army ROTC. Completion of either of these programs by a student leads to being commissioned in one of the branches of the United States Army Reserve or the Regular Army. Freshman/Sophomore AROTC carries no service obligation. One, two, three and four year scholarships are available to interested students who can qualify.

THE DEPARTMENT OF NAVAL SCIENCE offers a wide variety of academic programs which include all major courses available at the University of Florida. Numerous one to four year full scholarships (plus living expense payments) are available. Officer Commissions in the U.S. NAVY or U.S. MARINE CORPS are awarded upon completion with assignments in various occupational fields such as NUCLEAR POWER, AVIATION, MEDICINE, LAW, all ENGINEERING disciplines, MANAGEMENT and RESEARCH and DEVELOPMENT.

THE DEPARTMENT OF AEROSPACE STUDIES offers men and women students four-year and two-year programs in Air Force ROTC. Completion of either of these officer education programs leads to a commission in the United States Air Force. Numerous scholarships are available on a competitive basis to students enrolled in the program. Pilot training is given to qualified male AFROTC students electing a pilot career in the Air Force.

INSTRUCTIONAL SERVICE UNITS

THE OFFICE OF INSTRUCTIONAL RESOURCES encourages experimentation in teaching and individualized services to students. Reporting directly to the Office of Academic Affairs, it provides support for the innovation of alternative approaches to instruction in the colleges and departments of the University; assists faculty members in the development of instructional modules or systems for specific courses; and furnishes technical assistance in the development and use of teaching materials and media, analysis and improvement of teaching and the evaluation of student performance. Three units include an audio-visual materials center, testing and examination services, and an instructional improvement section.

Other units emphasizing individualized instruction include the Reading and Writing Center, the O.I.R. Teaching Center, and the Language Laboratory. Selected self-paced non-credit courses are available in reading, writing, study habits, tutoring and language skills. Research consultation, course enrichment and evaluation services are also offered to interested faculty.

THE OFFICE OF THE REGISTRAR has charge of the admission and registration of students, the maintenance of academic records, the scheduling of courses, and the issuance of transcripts of student records.

THE COUNSELOR TO FOREIGN AGRICULTURE STUDENTS. Foreign students in Agriculture are requested to contact the Office of International Programs in McCarty Hall. This office aids foreign students to integrate their American education more completely with actual conditions in their homelands and also gives information to all students interested in foreign agricultural problems and careers in the tropics.

UNIVERSITY OF FLORIDA LIBRARY SERVICE

The library consists of two central units, Library East and Library West, and branch libraries in the areas of Architecture and Fine Arts, Education, Engineering, Law, the Institute of Food and Agricultural Sciences, the J. Hillis Miller Health Center, Chemistry and the P.K. Yonge Laboratory School. In addition, reading room facilities have been provided for Business Administration, Journalism and Communications, Music, Physical Education, Health and Recreation, Physics and the dormitory areas.

The holdings of the libraries number over 1,800,000 cataloged volumes and a large number of uncataloged documents and newspapers. Many of the materials are in the form of microfilm and microcards. Among the special collections in the library system are the Rare Book Collection, the Belknap Collection for the Performing Arts, the P.K. Yonge Library of Florida History, the Marjorie Kinnan Rawlings Collection, which consists of manuscripts, typescripts, and memorabilia of one of America's distinguished novelists, and the Collection of Creative Writing, which includes work sheets, manuscripts, and other literary papers of significant contemporary American and British Authors. In recent years, special emphasis has been placed upon strengthening the holdings of the Latin American Collection, especially for the West Indies and the Caribbean areas.

Reference service is provided in Library West and in the various branch libraries and reading rooms. A major collection of bibliographies and reference books and the union catalog are located on the first floor of Library West.

Photoduplication services are available. The regular schedule for the central libraries is Monday through Friday, 8:00 A.M. to 11:00 P.M.; Saturday, 10:00 A.M. to 5:00 P.M.; Sunday, 10:00 A.M. to 11:00 P.M. The libraries serving the various academic colleges and schools observe a similar schedule with variations.

THE FLORIDA STATE MUSEUM

The Florida State Museum was created by an act of the Legislature in 1917 as a department of the University of Florida. Through its affiliation with the University it carries the dual responsibility as the State Museum of Florida and the University Museum.

The Museum operates as a center of research in anthropology and natural history. Its functions as an educational arm of the University are carried forward through interpretive displays and scientific and popular publications. Under the administrative control of the director are the three departments of the Museum: Natural Sciences, staffed by scientists and technicians concerned with the study and expansion of the research collections showing adaptive variations in animal structure and ecology; Social Sciences, whose scientists and technicians are concerned with the study of human variations and cultures, both historic and prehistoric; Interpretation, staffed by specialists in the interpretation of knowledge through museum education and exhibit techniques. Members of the scientific and educational staff of the Museum hold dual appointments in appropriate teaching departments. Through these appointments they participate in both the undergraduate and graduate teaching programs.

Scientific reports are published in the *Bulletin of the Florida State Museum, Biological Sciences*, the *Ripley P. Bullen Monographs in Anthropology and History*, and in the *Contributions of the Florida State Museum, Anthropology and History*.

The research collections are under the care of curators who encourage the scientific study of the Museum's holdings. Materials are constantly being added to the collections both through gifts from friends and as the result of research activities of the Museum staff. The archaeological and ethnological collections are noteworthy. There are extensive study collections of birds, mammals, mollusks, reptiles, amphibians, fish, invertebrate and vertebrate fossils, as well as archives of animal sounds associated with the bioacoustics laboratory.

Opportunities are provided for students, staff, and visiting scientists to use the collections. Research and field work are presently sponsored in the anthropological, paleontological and zoological fields. Students interested in these specialities should make application to the appropriate teaching department.

Graduate assistantships are available in the Museum in areas of specialization emphasized in its research programs. Facilities are available for graduate students.

The Museum is located at the corner of Museum Road and Newell Drive in a modern facility completed in 1970. The public halls are open from nine until five each weekday, including Saturday, and from one to five on Sundays, and holidays (closed Christmas Day). There is no admission charge. The Museum is frequently used by University and public school classes. Classes for children and special public programs are also offered for members of the University community and the general public.

GENERAL STATE AND UNIVERSITY AGENCIES

THE FLORIDA COOPERATIVE EXTENSION SERVICE.

The transfer and application of knowledge through non-resident educational programs is the primary purpose of the Florida Cooperative Extension Service, a division of IFAS. The educational programs are tailored to fit the needs of many audiences in areas of agricultural production, marketing and utilization; home economics; community resource development; and marine sciences. Audiences include adults and youth, rural and urban citizens, minorities and people from all economic levels. The Cooperative Extension Service is administered by the University of Florida under a memorandum of understanding with USDA. There is also a cooperative program funded through federal grants to the Florida Cooperative Extension Service with Florida A&M University. The basic legislative authority makes provision for cooperation with local government. In Florida, county programs are carried out jointly between the University and respective county governments in the 67 counties. The Extension Service along with Resident Instruction and Research in IFAS form a functional model typifying the tripartite organizational structure envisioned in the Morrill Act for the Land Grant College system.

The OFFICE OF UNIVERSITY RELATIONS is responsible for the development of public relations, including visitor reception, cooperating with all campus agencies and organizations in the planning and implementation of their public relations activitles and serving as the University representative with civic organizations which work with the University and are not professionally related to a particular school or college. University Relations coordinates with all campus agencies dealing with off-campus publics in a continuing effort to develop two-way communications with the public and to encourage public support and understanding of the University, its programs and higher education.

The DIVISION OF INFORMATION AND PUBLICATIONS SERVICES serves University academic units, departments, service offices and other campus-related organizations by distributing information through mass media outlets, and providing communication services for the campus community. It interprets the University's programs, policies and objectives through newspapers and magazines, radio and television broadcasts, motion pictures, publications, photographs, audio-visual presentations, special displays and exhibits, and community relations projects. The Division produces the *University Digest* printed in the *Independent Alligator*, and Uniscope, a 30-minute weekly magazine format television show used by commercial stations in the state's metropolitan areas. It assists other units with booklets, folders, brochures, and other printed material by coordinating copy content, design, and preliminary production, and assists in preparing bid specifications for printing.

The OFFICE OF DEVELOPMENT AND ALUMNI AFFAIRS is the campus headquarters for the University of Florida Alumni Association, Inc. and the University of Florida Foundation, Inc.

The University of Florida Alumni Association, Inc. brings together the organized efforts of alumni and the promotion of the interests and needs of the University and strives to encourage continuous participation by alumni in the life of the University.

The University of Florida Foundation exists to encourage support from the private sector to the University for both operating and capital purposes. It is a private corporation organized to hold funds for the benefit of the University, to invest them and to insure the maximum value of the University's private support.

THE UNIVERSITY GALLERY is an integral part of the Fine Arts College. The Gallery is located on the campus facing south 13th Street (or U.S. 441). An atrium and a reflecting pool are two pleasing features of the Gallery's distinctive architecture style. The Gallery, with 3000 square feet of display space, is completely modern, air-conditioned and maintains a varied exhibition schedule of the visual arts during the year. The content of exhibitions displayed in the University gallery range from the creations by traditional masters through to the lastest and most experimental works by the modern avant garde. The minor arts of yesterday and today along with the creations of oriental and primitive cultures form topics for exhibitions scheduled. The Gallery originates one or two of the major exhibitions during the year. Each exhibition shows for approximately a month and the Gallery's hours are from 9 A.M. to 5 P.M. daily except Sunday when they are 1 P.M. to 5 P.M. The Gallery is closed on Saturdays and holidays.

ART DEPARTMENT GALLERY, the teaching gallery, is located adjacent to the Department's office area on the third floor of the Classroom Building (Bldg. 'C' AFA), in the College of Architecture and Fine Arts complex. As a direct

and physical adjunct to the Art Department's teaching program this Gallery displays smaller traveling exhibitions of merit as well as one man shows by the faculty artists and student exhibitions. The Gallery is open Monday through Friday from 9 A.M. to noon and from 1:30 P.M. to 5 P.M. It is closed Saturdays, Sundays and holidays.

THE CENTER FOR LATIN AMERICAN AND TROPICAL ARTS is an interdisciplinary Center that provides coordination, direction, and focus to strengthen existing programs related to the Fine Arts within the College of Fine Arts. The Center's faculty is bound together by a desire to relate their research and teaching activities to the broader concepts concerned with the fine arts of various world cultures. The Center broadens and strengthens existing interdepartmental relations and provides additional stimuli and mechanisms for translating results of research into more viable forms that relate directly to societal needs. It also establishes more effective lines for the training of able students at the undergraduate, graduate, and adult education levels in various aspects of the fine arts.

THE UNIVERSITY BROADCAST FACILITY is operated by the College of Journalism and Communications. It includes WUFT, Channel 5, a public broadcasting television station (PBS), WRUF-AM, the commercial radio station 850 KHz WRUF-FM, a commercial FM station, stereo, 103.7 MHz, and Radio Center. Radio Center extends the cultural and informational arm of the university through the programs which it originates, produces, and distributes to radio stations throughout Florida.

Approximately 100 students are employed in these broadcasting operations. Thus, in addition to the broad academic background provided in the university's classrooms and laboratories, these work opportunities provide a valuable experience in day-to-day operations typical of the industry. Students perform such functions as director, cameraman, and disc-jockey all under the guidance of professional broadcasters. The college has earned a nationwide reputation for the demonstrated effectiveness of this academic and work experience training.

WUFT telecasts programs of PBS, the Public Broadcasting Service, FPB, Florida Public Broadcasting Network, as well as local studio and remote originations. As a unit of the Florida Public Television Network, it both originates and receives programs of particular interest to the people of Florida.

WRUF-AM serves the contemporary music audience, while the WRUF-FM music ranges from show tunes to classical music, with a touch of progressive rock for the late night listener. WRUF-AM is affiliated with the NBC network; WRUF-FM is affiliated with CBS. Student communicators produce and broadcast regular news programs over both stations under faculty supervision. Radio Center produces a continuing program of classical music that is broadcast on WRUF-FM each evening.

The student's proximity to, and participation in, this diverse broadcast operation brings a greater understanding of the opportunities and obligations that exist in the field of broadcasting.

THE UNIVERSITY OF FLORIDA PRESS functions to encourage, publish, and promote original and scholarly manuscripts which will aid in developing the University as a recognized center of research and scholarship.

In addition to its broad range of state, regional, and inter-American titles, the Press publishes books of general interest, and six separate series: The Floridiana Facsimile Series, the Institute of Gerontology Series, the Latin American Monographs, (Series Two), and the University of Florida Monographs (Humanities and Social Sciences). The Press is also the publisher of the annual HANDBOOK OF LATIN AMERICAN STUDIES, which is sponsored by the Library of Congress.

The Press Board of Managers, including the director and fifteen faculty members appointed by the President of the University, determines policies relating to the issuance of author contracts and the acceptance of manuscripts submitted for publication.

The University of Florida Press is a member of the Association of American University Presses and the Association of American Publishers.

ORGANIZED RESEARCH

THE DIVISION OF SPONSORED RESEARCH was established by an act of the legislature to support and to foster sponsored research and training as a resource essential to excellence in education and to provide maximum service to the State. The Division is a development arm of the University, coordinating its efforts closely with the Office of Academic Affairs and the Graduate School.

All proposals for sponsorship of research, grants-in-aid, and training grants are approved by the director. Negotiations on administrative matters with potential contracting agencies or sponsors of research and training projects are carried out by the Division.

The activities of the Division of Sponsored Research are intended to stimulate growth and to assist in expanding a balanced research and training program throughout the University. These activities are intimately related to the support of the graduate and professional program. The services provided are designed to relieve the principal investigators in many departments of detailed administrative and reporting duties connected with some sponsored programs. The duties and responsibilities of the Division, of course, do not supplant the prerogative of the principal investigator who seeks sponsors for his own project nor upon the responsibility of the investigator for the scientific integrity of the project. In direct contacts between a principal investigator and a potential sponsor, however, coordination with the Division is necessary to insure uniformity in contract requirements and to avoid duplication of negotiations with the same sponsor.

The Division of Sponsored Research is administratively responsible to the Vice President for Academic Affairs. Policies and procedures for the Division are developed by a board of directors working with the director within the general framework of the administrative policies and procedures of the University.

THE AGRICULTURAL EXPERIMENT STATIONS, an organizational division of the Institute of Food and Agricultural Sciences, is responsible for the IFAS research mission leading to improvement of all phases of Florida's widely varied agricultural production, processing and marketing. Research is administered by the Dean for Research located on the University of Florida campus. He works through 19 departments, 7 Agricultural Research and Education Centers and 14 Agricultural Research Centers.

Results of IFAS research are published in scientific journals, bulletins, monographs, circulars, mimeographed reports and the *Sunshine State Agricultural Research Report* and are available to Florida residents usually without charge upon request to the Editorial Department of the Agricultural Experiment Station at Gainesville. The Agricultural Experiment Station cooperates closely with the Agricultural Extension Service in providing research findings for prompt dissemination.

IFAS research is conducted within 19 departments — Agricultural Engineering, Agricultural and Extension Education, Agronomy, Animal Science, Botany, Dairy Science, Entomology and Nematology, Food and Resource Economics, Food Science, and Human Nutrition, School of Forest Resources and Conservation, Fruit Crops, Microbiology and Cell Science, Ornamental Horticulture, Plant Pathology, Poultry Science, Soil Science, Statistics, Vegetable Crops and Veterinary Science. In addition to the above the Main Station has six units vital to its research programs, namely: Editorial, Library, Business Service and Centers for Rural Development and Environmental Programs.

In order to best serve the varied needs of Florida's diversified agriculture, Agricultural Research and Education Centers are located at numerous locations having different climatic conditions, soil types and crops. Intensive research is

conducted in all fields of agriculture such as citrus, vegetable, field crops, livestock, pastures and many others.

The Agricultural Research Centers and their locations are as follows: Monticello, Brooksville, Ft. Pierce, Immokalee, Dover, Ft. Lauderdale, Hastings, Ona, Apopka, Marianna, Live Oak, Leesburg, Lakeland, Jay and Ocala.

The Agricultural Research and Education Centers and their locations, are as follows: Homestead, Belle Glade, Brandenton, Lake Alfred, Quincy, Sanford and Tallahassee. A Research and Education Center is also located at Welaka, Florida and is concerned largely with biological research programs and youth programs.

The Florida Agricultural Experiment Station is cooperating with the Brooksville Beef Cattle Research Station, Brooksville, a USDA field laboratory, in its beef cattle and pasture production and management programs, and with the National Weather Service, Lakeland, in the Federal Frost Warning Service for fruit and vegetable producers and shippers, as well as cooperating with numerous Florida agricultural agencies and organizations.

THE FLORIDA ENGINEERING AND INDUSTRIAL EXPERIMENT STATION developed from early research activities of the engineering faculty and was officially established in 1941 by the Legislature as an integral part of the College of Engineering. Its mandate is "to organize and promote the prosecution of research projects of engineering and related sciences, with special reference to such of these problems as are important to the industries of Florida."

The College and the Station are inextricably intertwined — the two activities cannot be separated functionally; they comprise the two arms of the whole engineering body. In many instances a program initiated primarily as a research entity has developed into a full-fledged academic department of the College, demonstrating the close interlocking relationship of the research and teaching functions.

Each year a series of "Special EIES Projects" are selected that are of high priority to Floridians. Examples are projects on regional water management, beach stabilization, pollution abatement, power plant site selection, stream improvement and technology transfer.

Since 1967, seven departments of the College of Engineering and the Experiment Station have moved into some 310,000 sq. ft. provided in seven modern new buildings and one remodeled building. These improvements, including equipment, have raised the value of the physical plant of the College to over $13 million.

The laboratories, staff, and facilities of other divisions of the University also are available to the Station research faculty through many outstanding interdisciplinary programs. These research faculty members comprise the teaching and lecture staff with whom the students come into daily contact in the classroom. With the close relationship that exists between teaching and research, students are exposed to many engineering and industrial problems normally not encompassed in a college program. Moreover, the undergraduate students frequently find employment on research projects as student assistants.

The Station receives only a small portion of its operating revenue from the state. The major support of its research activities is derived from contracts with government agencies, foundations, and industrial organizations. Large and small manufacturers avail themselves of the finest engineering research laboratories in the Southeast. The Station has superior facilities and staff in such fields as microelectronics and integrated circuits; power systems; metallurgy; ceramics; coastal and oceanographic engineering; soil mechanics; transport phenomena and fluid dynamics; energy conversion, air and water pollution control; electrochemistry; fast neutron physics; nuclear rocket propulsion; dynamics and vibrations; communications; kinetics, ionics, gaseous electronics and plasmas, and systems analysis, to name a few.

THE BUREAU OF RESEARCH is a unit of the College of Architecture established to foster and encourage research related to the disciplines represented in the college. These include architecture, building construction, landscape architecture, interior design, and urban planning. The Bureau also provides assistance to faculty and graduate students in establishing cooperative efforts with other units of the University.

THE BUREAU OF ECONOMIC AND BUSINESS RESEARCH is the Research Division of the College of Business Administration. A part of the work of the Bureau is to provide economic and business information about Florida. A major source of this information is the FLORIDA STATISTICAL ABSTRACT published annually by the Bureau. The Bureau, through its Division of Population Studies, makes annual estimates of population by city and county in Florida as well as providing other data on the components of population and growth. By published reports of special research and through the monthly Economic Leaflets (sent free to any resident of Florida upon request), quarterly release of Population Studies, the bi-monthly Business and Economic Dimensions, and special reports, the results of research work are available to all residents of Florida. Consultant services are rendered to the business community, civic groups, and government. The Bureau makes it possible for teaching professors to engage in organized research and provides research training for graduate students.

THE PUBLIC ADMINISTRATION CLEARING SERVICE, is a research, publication, and service adjunct of the Department of Political Science in the College of Arts and Sciences. It carries on a continuous program of research on public administration and public policy in Florida; it publishes research and surveys of governmental and administrative problems in both scientific and popular monograph form. In addition, the Public Administration Clearing Service coordinates the programs of instruction and public service training in cooperation with other units of the University.

THE COMMUNICATION RESEARCH CENTER OF THE COLLEGE OF JOURNALISM AND COMMUNICATIONS conducts research in the news media, in broadcasting, advertising, and public relations. The center is housed in Room 400, Stadium.

THE DIVISION OF PLANNING AND ANALYSIS performs the analysis and does the planning required to ensure that available resources will be used to accomplish the goals of the many and diverse programs of the University of Florida at minimum long-range cost. Work is carried out by the staff and related committees in the areas of campus planning, budgeting, space assignment, and coordination of architectural design and construction of facilities.

THE FLORIDA WATER RESOURCES RESEARCH CENTER which is funded by the Department of the Interior was established in 1964 at the University of Florida as the result of the passage of P.L. 88-379—The Water Resources Research Act of 1964—"to stimulate, sponsor, provide for, and supplement present programs for conduct of research, investigation, experiments, and the training of scientists in the fields of water and of resources which affect water." The Center's Director operates under the general policy guidance of an advisory committee appointed by the President of the University. Research projects administered by the Center and pertaining to the achievement of adequate state wide water resource management, water quality and water quantity are being conducted by professors in various departments at the University of Florida, and other colleges and universities in the State. Graduate assistants may be employed on these projects or other activities of the Center.

COMPUTATIONAL FACILITIES

In addition to numerous small digital computers and at least three hybrid computers located on the campus, the University of Florida houses the central facilities of the Northeast Regional Data Center (NERDC) of the State University System of Florida. These facilities, which are available to students and faculty at the University, include an Amdahl system 470 V/6-II computer with six megabytes of high-speed main memory, more than twenty four IBM 3330 equivalent disk drives, seven 9-track tape drives and one 7-track tape drive.

NERDC supports batch processing, high-speed cathode ray tube terminals running under CICS, and well over a hundred low speed interactive terminals serving almost all areas of the campus as well as other parts of northern Florida. These terminals support APL, FLORTRAN (a locally written interactive FORTRAN interpreter), BASIC, and ATS, in addition to having an interactive file generation and editing capability and the ability to be used for submission and batch jobs. Limited output from batch jobs may also be routed to such terminals. More extensive output is printed on the two centrally located high-speed printers or at one of the high-speed remote batch terminals which are also available for submission of batch jobs at several locations on campus. Graphic output is available via a Gould 5100 electrostatic plotter operated by NERDC for the University of Florida. Extensive software support is provided for batch processing, including the major high-level languages and a large number of program packages and special purpose languages. Among these are FORTRAN, PL/1, ASSEMBLER, COBOL, a number of student oriented compilers and interpreters, most major statistical packages, simulation languages, several libraries of scientific and mathematical routines, the Gould and other plotting software, and many others.

The NERDC facilities are used for administrative as well as instructional and research computing. Since NERDC is a State Univeristy System support facility, the staffs responsible for computing at the University of Florida are in three sepearately managed organizations which are not a part of NERDC. These are the Shands Teaching Hospital Data Processing Division, the University of Florida Administrative Computing Services, and the Center for Instructional and Research Computing Activities at the University of Florida (CIRCA-UF). More information about the NERDC is available through its user manuals and its monthly newsletter, /Update.

CIRCA-UF cooperates with NERDC to provide input/output services, consulting services, and applications software procurement, maintenance, and development, for the University of Florida students and faculty. High-speed batch input/output facilities are available at three campus locations, with open-shop keypunches near each. Open-shop terminals are available in Weil Hall for the academic community, as are consulting services. There is also a professional data-entry staff.

In cooperation with NERDC and CIRCA, the UF Library also offers extensive Census data services.

INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

THE INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES is the University of Florida's statewide agricultural research and educational organization. IFAS programs extend into every county, and reach people in virtually every community in Florida.

The Primary mission of IFAS is to help Florida realize its maximum potential for agricultural development, and to contribute to the solution of many social, economic, environmental and cultural problems of concern to the people of the state. This vital developmental mission is carried out through the three functions of resident instruction, research, and extension. These are carefully interrelated to provide a highly coordinated effort for the benefit of Florida — its citizens and its industry. This effort is guided by the Vice President for Agricultural Affairs.

The offices of the Vice President, as well as the Deans for Resident Instruction, Research, and Extension are located near the center of campus in McCarty Hall. Administrative offices of the School of Forest Resources and Conservation are located in Newins-Zeigler Hall.

The resident instruction programs of IFAS, conducted through the College of Agriculture and the School of Forest Resources and Conservation, are concerned with educating young men and women for the nation's growing and increasingly complex agricultural industry. The curricula for the different fields of study are structured to provide the business, technological and science education necessary for graduates to meet the ever changing needs of a diverse and highly specialized agriculture, as well as related business and industry. All academic departments offer an undergraduate program leading to a Bachelor of Science in Agriculture. The School of Forest Resources and Conservation offers an undergraduate program which leads to the Bachelor of Science in Forest Resources and Conservation. Graduate programs at the masters level are offered by all academic units. The Doctor of Philosophy degree is offered in 13 specialities.

The mission of the research programs of IFAS is one of development, as well as improving existing technology to enable Florida's agricultural industry to become more efficient and improve its competitive position in relation to other geographic areas; to improve consumer health and nutrition and to improve the social and economic well-being of producers and consumers of agricultural commodities and resources. Through the vast network of 23 research and education centers, located in various areas of the state, applied as well as basic research efforts develop new and improved technology to meet the agricultural needs of Florida.

The transfer and application of knowledge through non-resident educational programs is the primary purpose of the extension programs of IFAS. These educational programs are tailored to fit the needs of the many audiences in areas of agricultural production, marketing and utilization; home economics; community resource development; and marine sciences. Audiences include adults and youth, rural and urban citizens, minorities and people from all economic levels. This extension program is administered by the University of Florida in cooperation with the various Boards of County Commissioners and the United States Department of Agriculture. Through the Cooperative Extension offices in all 67 Florida counties, the resources and services of IFAS and the University of Florida are made available to the agricultural industry and all Florida citizens.

In 1972, the Center for Community and Rural Development was established to provide statewide coordination of the IFAS research and education programs in community development for rural and non-rural metropolitan areas. This center is concerned with improving the economic conditions in these areas so that people have better employment opportunities and will remain in small communities rather than migrate to cities. Through support of undergraduate and graduate education the Center is assisting in the training of young people to provide leadership in planning and developing local programs. Courses of study in the economics of environmental quality, natural resource planning and development, rural income and employment, and regional economic planning help them make definite contributions toward improving the economic and social conditions of non-urban areas.

General

GENERAL INFORMATION

The Center for Environmental Programs and Natural Resources was created in October, 1973, to provide statewide coordination for the IFAS research and education programs concerned with solving some of the serious environmental and natural resources problems related to agriculture throughout Florida. The Center is involved in developing ways to protect managed agriculture ecosystems from environmental damage, integrating environmental practices into agricultural production technology and protecting and enhancing the quality of all of Florida's environment.

The creation of an Office of International Programs within IFAS in 1966, formalized the international commitment of IFAS. The Office of International Programs is responsible for administration, coordination and development of all ac-

tivities which build or strengthen the international dimension of IFAS. This includes participation in the determination of contract and grant policy, development of outside funding sources for international research and training projects, and assistance in the initiation of new education programs. Integration of international programs into each department is a specific objective. This provides a unique opportunity for focusing maximum resources available to IFAS on the project. Both faculty in the state and those overseas benefit by the interchange of ideas. Education and research is handled under the same office by the Center for Tropical Agriculture established in 1965.

THE J. HILLIS MILLER HEALTH CENTER

The J. Hillis Miller Health Center at the University of Florida in Gainesville is a modern complex of institutions which advance human health and educate tomorrow's leaders in the health professions.

It is housed in a building complex which includes the College of Dentistry, the College of Health Related Professions, the College of Medicine, the College of Nursing, the College of Pharmacy and the new College of Veterinary Medicine which accepted 40 students in its charter class in September, 1976. The Shands Teaching Hospital and Clinics, which is the center for modern patient care and clinical training of new health professionals, is also located within the Health Center.

The north expansion of the Health Center's building program, the Communicore Building, became operational in 1974 and houses teaching laboratories, animal quarters, lecture halls, a library and a learning resources center. New facilities for the College of Dentistry became operational in 1975. As part of the Health Center Complex, new facilities for the College of Veterinary Medicine were phased into operation in late 1977 and early 1978.

A Veterans Administration Hospital across from the Health Center is engaged in programs of patient care, teaching and research which are affiliated with the programs in the Health Center's colleges.

The Jacksonville Health Education Program, Inc. which offers educational opportunity in clinical fields to students of the Health Center's colleges is an official division of the University of Florida.

The academic programs of the Health Center prepare students to understand that tomorrow's health care must focus on the community in order to achieve the comprehensive health care of man. The programs help them to understand that health care involves the health team: the physician; the nurse; the dentist; the pharmacist; persons in health related professions; the community; the researcher; the educator; the counselor; that by training together, and later by working together, these men and women contribute more effectively to a person's well being.

The health-oriented professions exchange information within the Health Center, and draw upon the other resources of the University to further man's understanding of health and illness.

Since the opening of its first units — the Colleges of Medicine and Nursing — in 1956, the Health Center has become a leading center for health care, education and research in the Southeast.

Located on the southern edge of the University of Florida campus, the Health Center was named for Dr. J. Hillis Miller, late president of the University whose vision and determination helped formulate the early planning of the health complex as an integral part of the University.

ADMISSIONS

APPLICATION FOR ADMISSIONS

Application for admission to any College, School or Division of the University must be made to the Admissions Section of the Office of the Registrar on the forms prescribed and by the dates indicated below. It is quite proper to correspond with Deans, Directors or Department Chairmen, but such contact with University officers does not in any way eliminate the necessity for filing a formal application in the Office of the Registrar by the dates specified.

How to Apply: An applicant should address a request to the Admissions Section, Office of the Registrar, University of Florida asking for application forms. Forms and directions for completing applications vary with the level of entry at the University and the applicant should indicate that forms are being requested for admission as a Freshman, Undergraduate Transfer, Graduate, Dental, Law, Medical, Veterinary Medicine, or Special student, as the case might be.

GENERAL STATEMENT

The University encourages applications from qualified applicants of both sexes from all cultural, racial, religious, and ethnic groups. The University does not discriminate on the basis of handicap in admission or access to its programs and activities.

A brief summary of the general requirements for admission or readmission to any college or division of the University is given below:

1. A satisfactory academic record
2. Satisfactory scores on achievement tests or examinations as noted
3. A satisfactory conduct record

The specific requirements for readmission (at the same or a different level) of a student previously enrolled at the University of Florida are given in the STUDENT REGULATIONS section of this catalog. Consult the index for page number.

The specific requirements for admission to the University of Florida for the first time as a Freshman, Undergraduate Transfer, Graduate, Dental, Law, Medical, Veterinary Medicine, or Special student may be found in the appropriate sections which follow. **It should be understood, however, that minimum requirements are given and that admission to the University is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission.**

The admission requirements have been arrived at after a very careful study of the experiences of thousands of students over a long period of years. In every case minimum requirements have evolved from studies of student performance at the University of Florida. These studies have had as a primary objective the identification of factors that would indicate a reasonable chance for successful completion of University of Florida work.

The University Admissions Committee is the agency responsible for administering all admissions to the University and its various components.

Students who are planning to enter the University of Florida for the first time will be considered for admission as follows:

1. *Beginning Freshmen:* students who have never attended college. (See following section, ADMISSION AS A FRESHMAN).
2. *Undergraduate Transfers:* students who have previously attended any college or university, regardless of amount of time spent in attendance or credit earned, but who have not received a bachelor's degree. (See following section, ADMISSION AS A TRANSFER STUDENT TO UNDERGRADUATE SCHOOLS AND COLLEGES).
3. *Graduate Students:* candidates for Master's or Doctor's degrees. (See following section, ADMISSION TO GRADUATE SCHOOL).
4. *Dental Students:* candidates for admission to the College of Dentistry. (See following section, ADMISSION TO THE COLLEGE OF DENTISTRY).
5. *Law Students:* candidates for admission to the College of Law. (See following section, ADMISSION TO THE COLLEGE OF LAW).
6. *Medical Students:* candidates for admission to the College of Medicine. (See following section, ADMISSION TO THE COLLEGE OF MEDICINE).
7. *Veterinary Medicine Students:* candidates for admission to the College of Veterinary Medicine. (See following section, ADMISSION TO THE COLLEGE OF VETERINARY MEDICINE).
8. *Special Students:* applicants who do not fall in one of the above categories. (See following section, ADMISSION AS A SPECIAL STUDENT).
9. *Transient Students:* applicants who wish to enroll for one term only in order to complete work for transfer back to parent institution. (See following section, ADMISSION AS A TRANSIENT STUDENT).

TRAVELING SCHOLAR PROGRAM

The Traveling Scholar Program affords graduate students at State University System institutions an opportunity to take course work or conduct research activities at any of the other institutions in the System. Course work taken under the auspices of the Traveling Scholar Program at another university in the System will apply for graduate credit at the student's home institution. The deans of the graduate schools of the State universities are the coordinators of the Program. For details regarding the Traveling Scholar Program and approval to participate in it, a student must apply to the dean of the graduate school on his home campus.

UNDERGRADUATE INTERINSTITUTIONAL REGISTRATION PROGRAM

The Undergraduate Interinstitutional Registration Program enables students at State University System institutions to take advantage of special resources and programs available on another campus in the System but not available at their home institution, e.g., special course offerings, research opportunities, unique laboratories, overseas study programs, and library collections. Course work taken under the Undergraduate Interinstitutional Registration Program will be accepted for credit at the student's home institution. A student must be recommended to participate in the Program by his own academic dean, who will initiate a visiting arrangement with the appropriate dean at the host institution.

PERSONAL HEALTH HISTORY REQUIREMENT

A personal health history completed by you and reported on forms supplied by the University Physician are required prior to initial enrollment at the University of Florida. If your application for admission is approved, the health history form will be forwarded to you for you to complete and return to the University Physician. Your form should be received by the University Physician at least two weeks prior to your planned date of entrance.

ADMISSION AS A FRESHMAN

(APPLICANTS WHO HAVE NEVER ATTENDED COLLEGE)

When to Apply: No application will be considered for the Freshman Class more than one year in advance of the date on

which entrance is sought. The best time to apply is the early part of the Senior year in Secondary School. Priority in admission to the September class will be given to qualified applicants whose applications are received in the Admissions Office prior to March 1st. Applications for the September class received after March 1st will be considered on a "space available" basis only. The deadlines for receipt of applications for other terms are listed in the University Calendar.

Admission of students is on a selective basis. The availability of community junior colleges and other state universities in Florida has caused the Board of Regents to assign to the University of Florida a role in the total state system of higher education which demands that the entering Freshman Class be limited in number. Such limitation does not prevent students from subsequently applying for admission to upper division and professional schools of the University since they may attend junior colleges or other universities and if qualified, then transfer to the University's upper division colleges in accordance with rules printed elsewhere in this Catalog.

The requirements for admission set forth below are designated to give priority to those applicants whose potential on the basis of their record indicates the greatest likelihood of success and the obtaining of maximum benefits from the Lower Division program at the University of Florida.

A. Requirements for admission — Florida students

For consideration a student must meet the following minimums:

1. Graduation from an accredited secondary school.
2. Twelve academic units in college preparatory courses such as English, Foreign Languages, Mathematics (beginning with Algebra), Natural Sciences, and Social Sciences.
3. An overall "C" average in academic courses.
4. A score in the top 40% on the Florida Twelfth Grade Tests or a comparable score on the Scholastic Aptitude Test (SAT) or the American College Testing Program (ACT).
5. A record of good conduct. Major or continuing difficulty with school or other authorities may make an applicant ineligible regardless of academic qualifications.

Any Florida student who meets the above minimum admission requirements and is interested in attending the University of Florida is urged to submit an application. The University will do everything possible to accept all qualified applicants who apply before the application deadline date. If the number of qualified applicants exceeds the number that the University is permitted to enroll, admission will be on a selective basis. An applicant's total high school record including grades, test scores, educational objective and pattern of courses completed, rank in class, school recommendation and personal record will be considered in the selection process.

Composite pictures of recent Freshman classes at the University of Florida indicate that approximately 70 percent rank in the top 20 percent of all high school Seniors on the basis of their admissions test scores. Approximately 50 percent of each entering class has earned a "B" or better average in high school academic subjects. While there is no minimum grade average or test score which in itself assures a student of admission or success in college, prospective Freshmen are urged to discuss the meaning and implication of these data with their school counselors before deciding whether to apply for admission to the University of Florida.

B. Requirements for admission — Non-Florida Students.

Because of a limited entering Freshman class, only a small number of highly qualified students from states other than Florida may be admitted. The minimum requirements for consideration are essentially the same as for Florida students except that priority in consideration for admission will be given to those applicants who present scores of at least 500 on each section of the Scholastic Aptitude Test of the College Entrance Examination Board and an academic average of "B" or better.

OTHER INFORMATION OF INTEREST TO PROSPECTIVE FRESHMAN APPLICANTS

OPPORTUNITIES FOR ACCELERATING COLLEGE GRADUATION

Early Admission

Applicants for Early Admission (i.e. admission following completion of the Junior year in high school) from superior students are encouraged and will be considered on an individual basis by the University's Admissions Committee. Applications should be submitted in accordance with deadlines published in the University Catalog.

In addition to the application, the following items are needed for processing Early Admission applicants.

1. A written statement by the student setting forth reasons for requesting early admission.
2. An official transcript of the applicant's secondary school record covering the 9th, 10th and 11 years. Generally, an overall academic average of B+ is expected.
3. Results of either the Scholastic Aptitude Test (SAT) or the American College Testing Program (ACT). Generally, a score of approximately 600 on each section of the SAT or a total score of 28 on the ACT is expected.
4. A letter of recommendation from the student's high school principal or guidance counselor. The letter should give specific reasons as to why the applicant would profit more from Early Admission than by completion of the Senior year in high school.

An applicant for Early Admission may be required to come to the campus for interviews by members of the Admissions Committee before a decision is made on the application. The Admissions Office will advise the applicant if interviews will be required after all of the above items have been received and evaluated. IMPORTANT: Please note that an applicant should NOT report for interviews until advised by the Admissions Office.

The University of Florida provides numerous opportunities other than *Early Admission* by which a student may accelerate graduation. For additional information, please refer to the section of this catalog entitled *Time Shortened Degree Opportunities.*

Florida Scholars Program. One hundred gifted and unusual students will be invited to begin their University studies after eleventh grade in a special program offered by the College of Arts and Sciences. After early admission through the procedure described above, qualified students will be interviewed by members of the Florida Scholars Committee. Each student selected for participation in the Program will confer with a faculty specialist in the student's proposed field of study. This professor will continue as the student's mentor throughout the undergraduate years; together they will design an individual course of study leading to a bachelor's degree from the College of Arts and Sciences. This early association with a distinguished scholar-teacher is intended to encourage and develop the student's promise as a person and potential as a scholar or professional.

For information concerning this program, contact Dean, College of Arts and Sciences, 113 Anderson Hall.

Candidates' Reply Date. Applicants accepted for admission to the September Freshman class must indicate their enrollment plans within 30 days after acceptance.

Advance Housing Payment. Entering freshmen are required to make a housing deposit within 30 days after acceptance if they desire to live in University housing. The housing deposit, less a $10.00 service charge, is refundable until May 1st for applicants accepted for admission to the September Freshman Class.

Admission with Advanced Standing. The University of Florida is a participant in the Advanced Placement Program and in the College Level Examination Program (CLEP) of the College Entrance Examination Board. Under the Advanced

Placement Program a student entering the University offers a nationally graded examination as evidence of completion of a college level course taken in high school. Depending on the results of the examination, the student may receive University credit for courses covering similar material or exemption from such courses without credit. Under the College Level Examination Program, the University grants credit for satisfactory scores in each of the five areas of the CLEP General Examinations. For further information, please refer to the section of the Catalog entitled *Time Shortened Degree Opportunities.*

Early Decision for Superior Students. Students with superior secondary school records (academic average at least 3.5) and Junior year high school SAT test scores (approximately 600 each on the verbal and mathematics sections) may apply for early decision. The student must certify that this is his only application and this statement must be supported by the signatures of his parents and appropriate school official. The completed application must be received by November 1 and, if admitted, the student must make his commitment to attend the University of Florida, accompanied by his housing payment, by December 1.

ADMISSION AS A TRANSFER STUDENT TO UNDERGRADUATE SCHOOLS AND COLLEGES

(APPLICANTS WHO HAVE ATTENDED ANY COLLEGE OR UNIVERSITY, REGARDLESS OF THE AMOUNT OF TIME SPENT IN ATTENDANCE OR CREDIT EARNED, ARE CONSIDERED AS TRANSFER STUDENTS.)

When to Apply: Applications may be submitted not more than one year in advance and applicants are strongly urged to apply at least six months prior to the date they plan to enter. Applicants for admission to the Colleges of Health Related Professions, Nursing, and Pharmacy should consult the individual college's section of this catalog for specific information regarding application deadlines. Applicants for admission to all other colleges should consult the University Calendar published in this catalog for information regarding the application deadline date for each term. An applicant who waits until the last possible date to file an application may find that it is impossible to furnish the necessary supporting records in time to permit a decision for the term that admission is desired.

NOTE: In the undergraduate programs in the College of Health Related Professions and the College of Pharmacy, the sequence of professional courses begins ONLY in the Fall Quarter of the Junior year.

In this section are listed the general requirements for admission of undergraduate transfer students. It should be observed however, that ADMISSION TO THE UNIVERSITY IS A SELECTIVE PROCESS AND SATISFYING THESE GENERAL REQUIREMENTS DOES NOT GUARANTEE ACCEPTANCE. Attention is also directed to the fact that Upper Division colleges of the University have established enrollment quotas because of limitations of space and facilities. Transfer applicants who meet the minimum admission requirements will be referred to the selection committee of the appropriate college for consideration of their enrollment within the college's established quotas.

A transfer applicant should refer to the General Information and Colleges sections of this catalog for an explanation of the academic organization of the University.

If an applicant is accepted for admission, courses completed at other accredited institutions with grades of "D" or higher which reasonably parallel the curriculum of the University of Florida will be accepted for transfer. However, it is the prerogative of the college (within the University) administering the work for the degree sought to determine how transfer credits may be used in satisfying degree requirements. No more than 64 semester hours (96 quarter hours) of credit transferred from or through a junior college may be applied toward the quantitative requirements for a University of Florida degree.

A. FLORIDA PUBLIC JUNIOR COLLEGE GRADUATES

This section applies ONLY to students seeking to transfer directly from a Florida public junior college with the Associate in Arts degree in a university parallel program. All other junior college applicants and undergraduate transfer applicants from four-year or upper division colleges and universities should consult Section B which follows.

The University of Florida subscribes to the Articulation Agreement between the State Universities and Public Junior Colleges of Florida. Under this agreement, any graduate of a State approved Florida public junior college is eligible for admission to the University if the student has completed the university parallel program and received the Associate in Arts degree, provided the degree has been awarded on the basis of the following:

1. At least 60 semester hours (90 quarter hours) of academic work exclusive of occupational courses;
2. An approved general education program of at least 36 semester hours (54 quarter hours);
3. A grade point average of at least 2.0 on a 4.0 system on all college level academic courses attempted.

Within space and fiscal limitations, applicants who have satisfied the above minimum requirements will be considered for admission at the Junior level to an Upper Division college. Such students may be required to take additional preprofessional courses not completed at the junior college. However, such courses will not reduce the number of credits required in the Upper Division for a degree.

B. TRANSFER APPLICANTS OTHER THAN GRADUATES FROM A FLORIDA PUBLIC JUNIOR COLLEGE

This section applies to students seeking to transfer from a Florida public junior college without an Associate in Arts degree in a university parallel program and to all undergraduate transfer applicants from other colleges or universities.

I. Requirements for admission to the Lower Division

1. *Eligible for admission as a beginning Freshman.* An applicant must have been eligible for admission to the University of Florida as a beginning Freshman in order to be considered for admission to the Lower Division as a transfer student. (See section, ADMISSION AS A FRESHMAN).

2. *Good standing.* An applicant must be in good standing and eligible to return to any institution previously attended. A student who for any reason will not be allowed to return to an institution previously attended cannot be considered for admission to the University of Florida.

3. *Satisfactory record:* An applicant must have an average of "C" or higher (as computed by the University of Florida) on all work attempted at each institution previously attended. No application can be considered until complete official transcripts of all the applicant's undergraduate work are in the possession of the Admissions Office. An official transcript must be furnished from each institution attended regardless of length of attendance or credit earned. Official supplementary transcripts are required, as soon as they are available, for any work completed after making application. Since an average of "C" or higher is required for graduation from the University of Florida, one who has failed to maintain this average at another institution is not eligible for admission. Regardless of the average earned, courses completed at other institutions must reasonably parallel the curriculum at the University of Florida.

4. *Satisfactory test scores:* An applicant who will present less than 60 semester hours (or 90 quarter hours) of acceptable college courses (including not more than 4 semester hours in Military Science and/or basic required Physical Education) as credit for advanced standing must present satisfactory scores on an acceptable general ability test. Any of the following tests may satisfy this requirement. If taken prior to first enrollment in college, the Florida Twelfth Grade Placement Test, the Scholastic

Aptitude Test (SAT) of the College Entrance Examination Board, or the American College Testing Program (ACT). Otherwise, the applicant should furnish scores on the School and College Ability Test, College Level (5CAT). The minimum acceptable score on these tests will vary with the amount and quality of academic study the applicant will have completed prior to transfer.

5. *Satisfactory conduct record:* An applicant must present a satisfactory conduct record. Regardless of other qualifications, an applicant who has experienced serious or continuing difficulty with school or other authorities because of improper conduct may find his application disapproved.

II. Requirements for admission to an Upper Division College.

With the exception of items 1 and 4, an applicant for admission to an Upper Division College must satisfy the requirements listed above for admission to the Lower Division. In addition, the following requirements must also be satisfied:

1. *Advanced Standing credit.* An applicant must present a minimum of 60 semester hours (or 90 quarter hours) of acceptable college courses, not more than four semester hours of which are in Military Science and/or basic required Physical Education as credit for advanced standing.

2. *Specific course requirements.* An applicant must present the courses listed as required for admission by the Upper Division college of his choice, or acceptable substitutes, as part of the courses offered for advanced standing credit. (See appropriate college section of this catalog). Upon recommendation by the Upper Division college, an applicant lacking some of the specific course requirements may be permitted to enroll in that college and complete them if he meets all other requirements for admission; however, such lower Division courses will not reduce the number of credits required in the Upper Division for a degree.

ADMISSION TO THE GRADUATE SCHOOL

When to Apply: Applications can be accepted as late as the final date listed in the Graduate Catalog. Because the final decision on admission to Graduate study has to be made by the Colleges and time is required to prepare the materials for their consideration, it is strongly urged that applications be made well in advance of this final date.

Application for admission to the Graduate School must be made to the Admissions Section, Office of the Registrar on forms supplied by that office and at the times stipulated in the University Calendar. Applications which meet minimum standards for admission are referred to the graduate selection committees of the various colleges and divisions for approval or disapproval.

No application will be considered unless the complete official transcripts of all the applicant's undergraduate and graduate work are in the possession of the Admissions, Section and no transcript will be accepted as official unless it is received directly from the Registrar of the institution in which the work was done. Official supplementary transcripts are required, as soon as they are available, for any work completed after making application.

In general, no student who is a graduate of a non-accredited institution will be considered for graduate study in any unit of the University.

All foreign students whose native tongue is not English making application for admission to the Graduate School of the University of Florida must present their scores on TOEFL (Testing of English as a Foreign Language). Each applicant is asked to write TOEFL Educational Testing Service, Princeton, New Jersey, U.S.A., requesting a Bulletin of Information and registration form. It is important to remember that final consideration can not be granted a foreign student's application for admission until his scores on this test are received by: Admission Section, Office of The Registrar, University of Florida, Gainesville, Florida, U.S.A.

Undergradate Record: Unqualified admission to the Graduate School is dependent upon the presentation of a baccalaureate degree from an accredited college or university with an average of B for the Junior and Senior years. In some units of the Graduate School and on the more advanced levels of graduate study, an undergraduate average considerably above B may be required. In some units admission may be considered with an undergraduate average slightly below B. College graduate admission selection committees take into account not only the general grade average, but the distribution of the course work and the quality and extent of preparation for the graduate program which the student proposes to undertake.

While the general admissions requirements described above apply to both master's and doctoral candidates, it should be noted that doctoral candidates must meet certain additional requirements, which vary according to the programs, established by the departments and colleges. Furthermore, it is desirable for students planning to enter certain colleges and departments to have a reading knowledge of one foreign language.

Graduate Record Examination: A satisfactory average score on the Graduate Record Examination is required for admission. Each applicant for admission must submit scores on the aptitude test of the GRE, but either at the request of the department concerned or on his own volition, the applicant is encouraged to submit in addition the score on one or more advanced subject-matter tests of the GRE. The scores on all tests taken will be weighed in regard to admission.

The GRE is given six times a year — in October, December, January, February, April and June — at a great many locations in the United States, including Gainesville, Florida. To determine exact dates and the most convenient locations, students should write to the Educational Testing Service, Princeton, New Jersey. Applications are required several weeks prior to the examination, and scores are received about a month after the examination. Hence, it is necessary to apply for the GRE in early September for admission in January, in early December for admission in March, in early January for admission in June, and in early March for admission in September. Other examinations are given for which application must be made in November and May but the ones listed above are correlated with admission deadlines.

ADMISSION TO THE COLLEGE OF DENTISTRY

When to Apply: The Application Request Card for the American Association of Dental Schools Application Service (AADSAS) may be obtained after May 15, from the Office of Admissions, College of Dentistry. The request card should be sent directly to the AADSAS, P. O. Box 1003, Iowa City, Iowa 52240. Upon receiving the application materials from the AADSAS, the completed forms and supporting documents must be returned directly the AADSAS no later than October 15, or the year prior to anticipated enrollment in dental school. Failure to meet this deadline will prevent the Dental Admissions Committee from evaluating your record.

The data compiled by the AADSAS will be carefully evaluated by the Dental Admission's Committee and promising applicants will be sent Formal Application forms which request additional information. The submission of a preprofessional committee evaluation or letters of recommendation from people in academics will not be necessary until the Formal Application forms are filed. The Formal Application forms and supporting materials should be submitted as early as possible, but no later than November 15, of each application year.

The College of Dentistry aspires to attract students of the highest caliber into its various programs. High standards of scholastic achievement, moral character, and motivation are

expected of the applicant. The student of dentistry must possess a high basic aptitude supplemented by an academic preparation of the highest order because of the vast area of science which must be mastered by the dentist. The highly personal relationship between patient and dentist places the latter in a position of trust, which demands maturity, integrity, intellectual honesty, and a sense of responsibility. A broad representation of the ethnic mixture of the State is sought in the student body through an active recruitment program. The College strictly adheres to the principle of ethnic, racial, religious and social equality among its student body and faculty.

Generally, students applying for admission should plan to complete the requirements for a bachelor's degree. However, qualified students may be accepted without fulfilling the degree requirements, provided they show evidence of sufficient preparation for the study of dentistry. Applicants with an overall "B" average as a minimum will receive strongest consideration for admission to the College of Dentistry. Applicants over the age of thirty rarely will be given strong considerations.

Every applicant must take the Dental Admission Test, preferably in the Spring preceding the submission of his Initial Application or, at the latest, the Fall testing period. The test is given twice a year at many college and university testing centers. Following a review of all application materials and Dental Admission Test scores by the Dental Admissions Committee, interviews with members of this Committee will be arranged for competitive applicants.

(See also more detailed description in the College of Dentistry bulletin.)

ADMISSION TO THE COLLEGE OF LAW

When to Apply: Applications can be accepted as indicated in the College of Law Catalog.

Beginning Students: All applicants for admission to the College of Law must have received a baccalaureate degree from a regionally accredited college or university and achieved a satisfactory score on the *Law School Admission Test.*

The minimum acceptable score on the Law School Admission Test required for admission varies with the total grade point average achieved by the applicant on all college work attempted by the applicant prior to receipt of the first bachelor's degree. The lower the grade point average, the higher the Law School Admission Test Score must be to qualify for admission. All applicants (including present and former University of Florida students) must register with the Law School Data Assembly Service (LSDAS) in lieu of requesting transcripts from each institution of higher education attended. For more detailed information on admission to the College of Law, please see the College of Law Catalog.

Advanced Standing Students: For information on admission to the College of Law with advanced standing see the College of Law Catalog.

ADMISSION TO THE COLLEGE OF MEDICINE

When to Apply: Because the number of places in the first year class of the College of Medicine is limited, it is important that a candidate make application as early as possible during the Summer or Fall of the year preceding his intended date of entry.

Personal qualities of high order — character, responsibility and maturity — are the primary requirements for admission. The student must have demonstrated superior intellectual achievement. A bachelor's degree is strongly recommended. The quality of the academic background as well as the performance of the student in relation to the load attempted, will be weighed. A genuine interest in human welfare is important. Efficient methods of study and effective powers of reasoning are essential.

The College admits both men and women. A limited number of out-of-state students, in proportion to the number in the University as a whole, may be admitted. Applicants over the age of thirty rarely will be given strong consideration. Students who have failed academically or are ineligible to continue in another medical school will not be admitted.

Applications from students who are presently enrolled in another medical school will be considered provided (1) the student is eligible to continue in his present medical school, and (2) the school he is now attending is a member of the Association of American Medical Colleges.

Prospective applicants must take the Medical College Admissions Test, preferably, by the Spring preceding the submission of the application. A personal interview will be required for final acceptance.

Graduate students who are candidates for the Ph.D. degree in medical sciences should apply through the Graduate School.

(See also more detailed description in the College of Medicine catalog.)

ADMISSION TO THE COLLEGE OF VETERINARY MEDICINE

When to Apply: Application forms are available between September 1 and January 1 from the Office of the Dean for Student Services, College of Veterinary Medicine. The application package (residency status, application forms, fees, letters of recommendation, GRE scores, etc.) must be received by the Admissions Office by 5:00 P.M., January 15, for the applicant to be considered for admission (or be postmarked no later than January 10).

(See also the section on the College of Veterinary Medicine on page 166).

ADMISSION AS A SPECIAL STUDENT

When to Apply: Each application for admission as a special student must be reviewed by the University Admissions Committee. Applications cannot be considered if they are received after the dates specified in the Catalog; and it would be desirable for a person considering application as a special student to initiate such an application at least three months in advance of the term he wishes to enter, in order to allow time for additional evidence to be presented if it should be requested by the Admissions Committee.

Special students may be admitted to the various schools and colleges of the Upper Division only by approval of the University Admissions Committee. Each case will be considered on an individual basis. Applications for admission as a special student must include: (1) records of previous educational experience (high school or college transcripts); (2) a statement as to the type of studies to be pursued; (3) a brief statement of the reason or reasons for selecting a special program other than a regular one; (4) satisfactory evidence of ability to pursue these studies — for example, a student to enroll as a special student for some technical courses and who feels qualified to do so by reason of employment or other experience; (5) satisfactory scores on such ability or achievement tests as may be prescribed in individual cases by the University Admissions Committee.

ADMISSION AS A TRANSIENT STUDENT

Subject to availability of faculty, space and facilities, a regular undergraduate student in good standing at another accredited collegiate institution may be permitted to enroll

at the University of Florida as transient student in order to complete work to transfer back to the parent institution. No evaluation will be made of work previously completed and it is the student's responsibility to secure such approval as the parent institution may require.

Transient students are registered as NON-DEGREE students and no application for admission is required. The appropriate forms of enrolling as a NON-DEGREE student should be requested from the Office of the Registrar. Since registration is subject to the availability of space, approval to enroll as a non-degree student cannot be given prior to the first day of classes in the term for which the student wishes to enroll.

Enrollment as a NON-DEGREE student in no way implies future admission as a regular student to the University of Florida.

ADMISSION INFORMATION FOR VETERANS ADMINISTRATION, AND SOCIAL SECURITY

The University of Florida is approved for the education and training of veterans under all public laws now in effect, i.e., Chapter 31, Title 38, U.S. Code (Disabled Veterans), Chapter 34, Title 38, U.S. Code (Cold War G.I. Bill), and Chapter 35, Title 38, U.S. Code (Children of Deceased or Disabled Veterans). Students who may be eligible for educational benefits under any Veterans Administration program are urged to contact the local Veterans Administration representative as soon as accepted by the University. Students expecting to receive benefits under one of these programs must file an application for benefits. No certification can be made until the application is on file. Benefits are determined by the Veterans Administration and the University certifies according to their rules and regulations.

Inquiries relating to Social Security Benefits should be directed to the student's local Social Security Office. The Office of the Registrar will submit enrollment certificates issued by the Social Security Administration for students eligible to receive educational benefits under the Social Secuirty Act, providing the student registers for twelve quarter hours or more.

A full time load for VA or Social Security benefits is twelve hours per quarter for undergraduates.

ADMISSION INFORMATION FOR FOREIGN STUDENTS

All foreign students whose native tongue is not English making application for admission to the University of Florida must present their scores on TOEFL (Test of English as a Foreign Language). Each applicant is asked to write TOEFL, Educational Testing Service, Princeton, New Jersey, U.S.A., requesting a Bulletin of Information and registration form. It is important to remember that final consideration cannot be granted a foreign student's application for admission until his scores on this test are received by: Admission Section, Office of the Registrar, University of Florida, Gainesville, Florida, 32601, U.S.A.

Expenses

APPLICATION FEE

Each application for admission to the University must be accompanied by an application fee of $15.00. Application fees are nonrefundable. Further instructions will be found in the Admissions section of this catalog.

GENERAL

STUDENTS SHOULD BRING SUFFICIENT FUNDS, OTHER THAN PERSONAL CHECKS TO MEET THEIR IMMEDIATE NEEDS. Personal checks will be accepted for the exact amount of fees.

CLASSIFICATION OF STUDENTS — FLORIDA OR NON-FLORIDA

(Section 6C—7.05, Florida Administrative Code)

(1) For the purpose of assessing registration and tuition fees, a student shall be classified as a "Florida" or "non-Florida" student.

(a) A "Florida student" is a person who has domicile in and who shall have resided in the state of Florida for at least twelve (12) consecutive months immediately preceding the first day of classes of the academic term in which the student enrolls. In determining residency, the university may require evidence such as voter registration, driver's license, automobile registration, location of bank account, rent receipts or any other relevant materials as evidence that the applicant has maintained continuous residency. Physical presence for the entire twelve-month period need not be required so long as the conduct of the student, taken in total, manifests an intention to make Florida his or her permanent dwelling place. If such a student is a minor, it shall mean that the parent or parents, or legal guardian of the student shall have domicile in and have resided in the state of Florida for the period stated above. "Florida student" classification shall also be construed to include students who held an Immigration and Naturalization Form 1-151, Resident Alien Registration Receipt Card, or Cuban Nationals or Vietnamese Refugees who are considered as Resident Aliens, provided such students meet the residency requirement stated above and comply with subsection (2) below. The burden of establishing facts which justify classification of a student as a resident and domiciliary entitled to "Florida student" registration rates is on the applicant for such classification.

(b) In applying this policy:

1. "Student" shall mean a person admitted to the, or a person allowed to register at the institution on a space available basis.

2. "Minor" shall mean a person who has not attained the age of 18 years, and whose disabilities of minority have not been removed by reason of marriage or by a court of competent jurisdiction.

3. "Domicile" for fee paying purposes shall denote a person's true, fixed, and permanent home and place of habitation. It is the place where the applicant lives and remains and to which he expects to return when he leaves, without intent to establish domicile elsewhere.

4. "Parent" shall mean a minor's father or mother, or if one parent has custody of a minor applicant, it is the parent having court assigned financial responsibility for the education of the student; or if there is a court appointed guardian or legal custodian of the minor applicant, it shall mean the guardian or legal custodian.

5. The term "dependent student," as used in this rule is the same as a dependent as defined in sections 151(e)(1)(2)(3) and (4) of the Internal Revenue Code of 1954. A copy of these provisions in the Internal Revenue Code of 1954 is incorporated in this rule by reference.

6. A "non-Florida" student is a person not meeting the requirements of subsection (a) above.

(2) In all applications for admission or registration at the institution on a space available basis, a Florida applicant, or if a minor, the parent or legal guardian of the minor applicant, shall make and file with such application a written statement, under oath, that the applicant is a bonafide citizen, resident, and domiciliary of the state of Florida, entitled as such to classification as a "Florida student" under the terms and conditions prescribed for citizens, residents, and domiciliaries of the state of Florida. All claims to "Florida student" classification must be supported by evidence as stated in 6C-7.05(1) if requested by the registering authority.

(3) A "non-Florida student" or, if a minor, his parent or guardian, after having been a resident and domiciliary of Florida for twelve (12) consecutive months, may apply for and be granted reclassification prior to the first day of classes of any subsequent term; provided, however, that those students who are non-resident aliens or who are in the United States on a non-immigration visa will not be entitled to reclassification. An application for reclassification as a "Florida student" shall comply with provisions of subsection (2) above. An applicant who has been classified as a "non-Florida" student at time of original enrollment shall furnish evidence as stated in 6C-7.05(1) to the satisfaction of the registering authority that the applicant has maintained continuous residency in the state for the twelve months required to establish residence for tuition purposes. In the absence of such evidence, the applicant shall not be reclassified as a "Florida student." In addition, the application for reclassification must be accompanied by a certified copy of a declaration of intent to establish legal domicile in the state, which intent must have been filed with the Clerk of the Circuit Court, as provided by Section 222.17, Florida Statutes. If the request for reclassification and the necessary documentation is not received by the registrar prior to the last day of registration for the term in which the student intends to be reclassified, the student will not be reclassified for that term.

(4) Unless evidence to the contrary appears, it shall be presumed by the registering authority of the institution at which a student is registering that:

(a) The spouse of any person who is classified or is eligible for classification as a "Florida student" is likewise entitled to classification as a "Florida student." This provision will not apply in the case of students who are non-resident aliens or who are in the United States on a non-immigration visa.

(b) If an applicant's eligibility for classification as a "Florida student" is based on the residency of the spouse, the spouse shall make and file with the application a written statement under oath, that said person is the spouse of the applicant and a bonafide citizen, resident and domiciliary of the state of Florida, entitled as such to classification as a "Florida student."

(c) No person over the age of 18 years shall be deemed to have gained residence while attending any educational institution in this state as a full-time student, as such status is defined by the Board of Regents, in the absence of a clear demonstration that he has established domicile and residency in the state, as provided under subsection (3) above.

(d) Any "Florida student" who remains in the state, after his parent previously domiciled in Florida or stationed in Florida on military orders removes from this state, shall be entitled to remain classified as a "Florida student" so long as his or her attendance at a school or schools in Florida shall be deemed "continuous." However, such student claiming continuous attendance must have been enrolled at a school, college or university for a normal academic year in

each calendar year, or the appropriate portion or portions thereof, from the beginning of the period for which continuous attendance is claimed. Such a student need not attend summer sessions or other such intersession beyond the normal academic year in order to render his attendance "continuous."

(5) Appeal from a determination denying Florida student status to any applicant therefor may be initiated after appropriate administrative remedies are exhausted by the filing of a petition for review pursuant to Section 120.68 F.S. in the District Court of Appeal in the appellate district in which the institution maintains its headquarters or where a party resides.

(6) Any student granted status as a "Florida student," which status is based on a sworn statement which is false shall, upon determination of such falsity, be subject to such disciplinary sanctions as may be imposed by the president of the university.

(7) Special Categories—The following categories shall be treated as Florida residents for tuition purposes if adequate documentation is provided:

(a) A member of the Armed Services of the United States who is stationed in Florida on active duty pursuant to military orders, the spouse and dependent students.

(b) A veteran of the Armed Forces of the United States of America with twenty (20) or more years of active military service, including the spouse and dependent students of such veteran's immediate family, provided that the veteran is in Florida at time of retirement or moves to Florida within one year following retirement and files a declaration of Florida domicile.

(c) Full-time elementary, secondary, and community college faculty members under current teaching contracts in the state of Florida and their spouses and dependent students.

(d) Full-time faculty, administrative and professional and career service employees of the University System and their spouses and dependent students.

(e) A student certified by his respective state for participation in the Academic Common Market Program of the Southern Regional Education Board who is enrolled in a program approved by the Florida Board of Regents.

(f) Florida domiciliaries living in the Panama Canal Zone who have not established domicile elsewhere, including the spouse and dependent students.

(g) Florida residents who had their residency in Florida interrupted by service in the U. S. armed forces, the Peace Corps or other similar volunteer organizations fostered by the United States government shall be deemed to have had residency in Florida during times of service in the aforementioned organizations.

(8) Reciprocal Agreements. The Board of Regents may enter into agreements with appropriate agencies and institutions of higher education in other states and foreign countries providing for the reciprocal exchange of students enrolled and prospective in higher educational institutions to facilitate utilization of public higher educational institutions in this State and other states or countries. Such agreements may include provisions for waiver or reduction of non-resident tuition for designated categories of students and may include contractual payments to such other state or country, subject to the availability of appropriations. Such agreements shall have as their purpose the mutual improvement of educational advantages for residents of this State and such other states or countries with whom agreements may be made.

To establish Florida residence a student applying for admission should complete the residence affidavit on the application form.

To change status from non-Florida a student must present to the Registrar's Office a copy of the Declaration of Intent and the completed Residence Affidavit Form. To claim the military exception the student must furnish the Registrar's Office a copy of the military orders showing assignment to Florida. A public school official must submit a written statement from his or her superior as to his or her public school status. A University employee must submit a statement from his or her employer as to his or her employment status.

DEFINITION OF REGISTRATION.

Registration consists of three major components:

1. The registrant must supply information requested by the university for the purpose of establishing and administering academic, financial and community relationships between the university and the student;

2. The registrant must supply course and schedule information needed to establish and administer his matriculation in particular departments, courses and sections;

3. The registrant must pay all assessed registration and tuition fees as well as satisfy all current or delinquent amounts payable to the university.

REGISTRATION AND INSTRUCTIONAL FEES

The University Calendar appearing at the front of this Catalog sets forth the beginning and ending dates of each quarter.

THE FOLLOWING FEES AND CHARGES ARE PROPOSED AT THIS TIME. HOWEVER, SINCE THE CATALOG MUST BE PUBLISHED IN ADVANCE OF ITS EFFECTIVE DATE IT IS NOT ALWAYS POSSIBLE TO ANTICIPATE CHANGES AND THE FEE SCHEDULE MAY BE REVISED. EVERY EFFORT WILL BE MADE TO PUBLICIZE CHANGES FOR ANY QUARTER IN ADVANCE OF THE REGISTRATION DATE FOR THAT QUARTER.

Fees are payable on the dates listed in the University of Florida Calendar appearing at the front of the Catalog or the dates shown on statements sent those participating in Advance Registration. Payment of fees is an integral part of the registration process. Registration (including payment of fees) must be completed on or before the proper due date. Student Accounts, The Hub, must be provided a properly executed authorization for payment in cases where fees are to be paid by a previously approved loan, scholarship, etc., prior to the deadline published in the Calendar.

FEE LIABILITY

LIABILITY IS INCURRED FOR ALL CREDIT HOURS REMAINING ON A STUDENT'S SCHEDULE AT THE CLOSE OF THE DROP/ADD PERIOD EACH QUARTER.

ASSESSMENT OF FEES

Students must assess and pay their own fees. UNIVERSITY PERSONNEL WILL NOT BE HELD ACCOUNTABLE FOR PROPER ASSESSMENT OR MATHEMATICAL ACCURACY OF CALCULATIONS. Students should assess their fees in accordance with the table of charges below:

COURSE FEES Charge per Credit Hour

			Summer Course Fees	
Course No.	Florida Students	Non-Florida Students	Florida Students	Non-Florida
0-2999	$15.00	38.00	9.00	32.00
3000-4999	16.50	51.50	10.50	45.50
5000-9999 (excluding 6971 & 7980)	22.00	62.00	22.00	62.00
6971 & 7980 (Thesis & Dissertation)	24.00	64.00	24.00	64.00

STUDENTS ENROLLED IN THE M.D., D.M.D., OR D.V.M. PROGRAMS

A Florida student will pay $450.00 for each quarter of enrollment. A non-Florida student will pay $1,018.00 for each quarter of enrollment. (These amounts include the $11.00 Student Health Fee.)

NOTE: A student registered for twelve (12) hours per quarter is considered as full-time for Veterans Administration and

Social Security benefits, and Student Financial Aid. For all other purposes nine hours per quarter is considered full-time.

STUDENT HEALTH FEE

STUDENTS REGISTERED FOR NINE OR MORE CREDIT HOURS PER QUARTER ARE REQUIRED TO PAY AN $11.00 STUDENT HEALTH FEE. The student health fee is optional for students registered for eight hours or less.

WAIVER OF HEALTH AND STUDENT ACTIVITY AND SERVICE FEES

The University Controller may waive the Student Health Fee and the Service and Activity Fee for students participating in such off-campus credit programs as the Mexican Law Summer Program and the Utrecht Program.

These fees may also be waived at the discretion of the Controller for those whose studies required them to be off-campus for an entire quarter or for such a duration as to preclude their use of university facilities funded from these fees.

A request for approval of such a waiver should be originated by the dean or department chairman in charge of the program upon request from the student enrolled in the program.

LATE REGISTRATION

A fee of $25.00 will be assessed against students who fail to initiate registration during the registration period or who fail to pay fees within the time period specified.

REINSTATEMENT FEE — CANCELLATION AND REINSTATEMENT.

1. The university will cancel the registration of a student whose fee account for enrolled instructional courses is in arrears beyond the close of business on the twenty-eighth day after the opening day of classes. A student whose registration is cancelled is not entitled to a refund beyond the circumstances covered under the refund policy.
2. Reinstatement will require approval of the university, payment of all delinquent liabilities and payment of a reinstatement fee of $25.00 in addition to the late registration fee.

DEADLINES

Students are reminded that deadlines are strictly enforced. The University does not have the authority to waive the late and/or reinstatement fees unless it has been determined that the University is primarily responsible for delinquency in a student account or that extraordinary circumstances warrant such waiver.

LOCAL ADDRESS

IT IS THE RESPONSIBILITY OF THE STUDENT TO BE SURE THAT A CORRECT CURRENT LOCAL ADDRESS IS ON FILE WITH THE REGISTRAR AT ALL TIMES. Change of Address forms may be obtained from the Registrar's Office.

PICTURE I.D.

A CURRENT VALID PHOTO I.D. MUST BE PRESENTED IN ORDER TO TRANSACT BUSINESS AT THE OFFICE OF STUDENT ACCOUNTS.

SPECIAL FEES AND CHARGES

AUDIT FEE. Fees for audited courses are the same as those listed above for Florida students. The audit fee is the same for Florida and non-Florida students.

COLLEGE LEVEL EXAMINATION PROGRAMS. Examinations are administered on campus during the third week of each month. Applications should be completed in the Office of Instructional Resources, 408 Seagle Building before the first day of the month in which a test is to be taken. The fee for one general examination is $20.00, for two examinations, $30.00 and for 3-5 examinations, $40.00. Subject examinations are $20.00 each. Checks should be payable to College Level Examination Program.

GRADUATE RECORD EXAMINATION. The Aptitude Test of the Graduate Record Examination is required for admission to the Graduate School. A fee of $10.50 covers the cost of this examination. Students who take one of the Advanced Tests of the Graduate Record Examination in combination with the Aptitude Test pay a fee of $21.00. These fees are payable to the Educational Testing Service, Princeton, New Jersey 08540.

GRADUATE SCHOOL FOREIGN LANGUAGE TEST. All students wishing to be certified as proficient in a reading knowledge of French, German, or Spanish, must take the Educational Testing Service (ETS) Graduate School Foreign Language Tests. A fee of $12.50 covers the cost of each examination. This fee is payable to Student Accounts, The Hub. Administrative arrangements to register for this examination will be made through the Graduate School Office.

LIBRARY BINDING CHARGE. Candidates for a graduate degree with a thesis or dissertation pay a $10.00 charge for the permanent binding of the two copies deposited in the University of Florida Library. This charge is payable at Student Accounts, The Hub, by the date specified in the Graduate Catalog. A copy of the receipt must be presented at the Graduate School office.

REFUND OF FEES

1. Fees will be refunded in full for:
   a. Credit hours dropped during the drop/add period.
   b. Courses cancelled by the University.
2. With the exception of amounts required for collection under bond and trust obligations, fees may be refunded in instances of:
   a. Involuntary call to active duty.
   b. Death of a student.
   c. Illness of the student of such duration or severity, as confirmed by a physician, that completion of the quarter is precluded, or
   d. Exceptional circumstances, upon approval of the University President.

Refunds may be obtained at Student Accounts, THE HUB, upon presentation of proper documentation.

PAST DUE STUDENT ACCOUNTS

All students' accounts are due and payable at Student Accounts, The Hub, at the time such charges are incurred.

University regulations prohibit registration, graduation, granting of credit or release of transcript for any student whose account with the University is delinquent.

Student Affairs

The following information describes the responsibilities of the various offices charged with assistance to students at the University of Florida. Additional information may be found in THE FLORIDA STUDENT GUIDE and THE CAMPUS DIRECTORY.

VICE PRESIDENT FOR STUDENT AFFAIRS

The Office of the Vice President for Student Affairs is a focal point for student concerns and strives to make the educational experience for students at the University of Florida as meaningful as possible. The Vice President for Student Affairs works to maintain and improve good communications and working relationships among and between students, faculty, and administration.

The goals of the Division of Student Affairs include: developing effective and efficient services and programs for students through the various departments within Student Affairs; integrating student affairs and academic affairs; directly involving students in the affairs of the institution; encouraging a sense of community among students, faculty, and administration; and increasing accessibility to and attractiveness of the University of Florida to a wide variety of persons.

The Office of the Vice President for Student Affairs is located in 123 Tigert Hall and is open to assist individual students and groups in matters concerning them. All students are encouraged to share in the responsibility for enabling the various divisions of the University of Florida community to meet the needs of students.

The Office of the Vice President for Student Affairs has administrative responsibility for the following offices and programs at the University of Florida: Office for Student Services, Student Housing Office, Office for Student Financial Affairs, Career Resources Center, J. Wayne Reitz Union, and University Counseling Center.

OFFICE FOR STUDENT SERVICES

The basic commitment of the Office of the Dean for Student Services at the University of Florida is to the total development of each individual student so that he or she might achieve full potential as a human being. Staff members strive to help students become self-directive in all their activities. The staff feels it can most effectively be helpful to students by reaching them "where they live," in real life situations.

The purposes of the Office for Student Services are to contribute to the attainment of the educational goals of the University of Florida by: helping to structure appropriate experiences for the intellectual, psychological, social and physical development of each student; providing opportunities for students' need for personal attention; assisting students in the development of their career objectives; making students aware of and encouraging the use of the resources of the University; interpreting the goals, objectives and actions of the institution to students; encouraging the development of a sense of community among students, faculty and staff; helping students to develop purpose in their lives — a system of values of which they are aware and a sense of personal integrity; and assisting in the development of university policy and procedures.

Functions emerge from purposes, and the Office for Student Services at the University of Florida carries on these functions: individual advising, student advising, new student programs, coordination of programs for the physically handicapped, fraternity and sorority coordination, minority student affairs, veteran student affairs, committee responsibility for student petitions and admissions, married student programs, women's programs, mature student programs, commuter student services, student judicial affairs, off-campus student programs and services, and student withdrawals.

The International Student Center and the Institute of Black Culture are also operational units of the Office for Student Services.

INTERNATIONAL STUDENT SERVICES

The International Student Services center assists international students in adjusting to the changing life style and study habits in a new and sometimes perplexing environment. Special services are provided related to foreign educational and cultural backgrounds; language, legal, employment, academic, and personal matters; U.S. immigration and other government agency responsibilities as aliens; and currency exchange. The focus is on helping international students achieve their educational goals, while providing an insight into the culture of the United States through a program of social activities, orientation seminars, and community visits.

INSTITUTE OF BLACK CULTURE

The Institute of Black Culture is an educational tool for students at the University of Florida. It is a facility for enlightenment and black awareness where Afro-Americans can focus on their history, literature, art, culture, and life style. It is also a place where whites can develop a better understanding of blacks and an appreciation of black contributions to American society. The center sponsors programs, exhibits, and related activities.

STUDENT HOUSING

The Director of Housing and his staff administer, supervise, and coordinate all programs and operations in the residence halls, the apartment villages, and the Off-Campus Housing Office.

GENERAL INFORMATION

All Freshmen who apply for admission to the University will receive Housing Agreements upon approval of admission. No application for housing is made by beginning Freshmen.

The University of Florida has no residency requirement. Entering students are free to choose either on-campus or off-campus accommodations. However, residents must be full-time students to be eligible to reside in the residence halls. Full-time enrollment for residency is defined as being enrolled in 9 credit hours if an undergraduate and 8 credit hours if a graduate student.

All non-beginning Freshmen must initiate their arrangement for housing either by (1) applying to the Director of Housing for assignment to university housing facilities, or (2) obtaining accommodations in private housing (see Off-Campus Housing Section).

All correspondence concerning application for University Housing should be addressed to the Director of Housing, University of Florida, Gainesville, 32611. An application for residence hall space for students other than Freshmen may be filed at any time after an application for admission to the University has been made. Prospective students are urged to apply as early as possible because of the housing demand.

Roommate requests shall be considered if the individuals wishing to room together submit their applications on the same date, clearly indicate their desire to room together on their respective applications, elect the same visitation choices, and are within similar academic classification.

HOUSING ADMINISTRATION AND STAFF

ORGANIZATION—University residence halls have been designed and organized to emphasize the importance of the individual student in small living groups. Each hall provides opportunities for formal and informal educational programs, together with social and recreational activities. Many residents find their hall the center of their out-of-class

interests. Programs and activities vary from hall to hall and from year to year, since they are based on the needs and interests of the students.

STAFF—In all residence halls or housing areas, professionally trained, Residence Life Coordinators, Hall Advisers, and student Resident Assistants are well qualified to assist with group and individual activities, as well as with matters of personal concern to student residents. In each living unit (floor or section), resident assistants and student leaders provide group leadership and guidance.

SELF GOVERNMENT—All students in the residence halls are entitled to participate in organizational activities which can play a significant part in their educational, cultural, social, and recreational life. Officers and representatives are elected to hall and area councils which govern group activities and help establish standards for group living.

In all residence halls, an annual activity fee (optional) of $5.00 is collected and administered by the hall organization to meet expenses of activities and programs.

ROOM FURNISHINGS—Rooms are equipped with beds, mattresses, mattress pads, wastebaskets, desks, chairs, closets, chest-of-drawers, and venetian blinds. Residents are encouraged to obtain their own drapes, pictures, bedspreads, rugs, and desk lamps after arrival at the University.

LINEN SERVICE—All students assigned to residence halls may elect for a basic linen service. The charge is $13.00 extra per quarter. This service entitles a student to two sheets, one pillowcase, and three towels per week. Extra linens or additional items such as blankets, pillows, and desk lamps may be rented at a nominal cost.

TELEPHONE SERVICE—Room telephones are available in all of the residence halls except Buckman and Reid Co-ops. Each room telephone provides 24-hour service on campus and within the Gainesville area. Charges for long distance calls are billed monthly to the room phone by the Southern Bell Telephone Company and residents pay directly to the company. The basic cost for local room telephone service is included in the room rent.

ROOM REFRIGERATORS—Refrigerators are provided in some residence areas and the cost is included in the quarterly rate. Students may bring their own individual refrigerators to any residence hall where refrigerators are not permanently installed. Students must make their own arrangements for installation and removal of private refrigerators. Students who bring private refrigerators to rooms which are already furnished with refrigerators will not receive a refund for the University refrigerator.

SWIMMING POOLS—Swimming pools are located adjacent to the Graham Area and the Yulee Area and are available for use of students, staff, and faculty of the University.

RESIDENCE HALLS FOR SINGLE STUDENTS

Some variety in types of accommodations is provided by the University. The double room for two students is the most common type. Several of the larger rooms or suites are designated as triple rooms. Single rooms are available in limited number, suites for two students are available in several of the residence halls. Each suite consists of two connected rooms—a bedroom and a study room.

Beaty Towers, Hume Hall, Graham Area, Tolbert Area, and Jennings Hall are totally air-conditioned. Other residence halls, where student rooms are not air-conditioned, provide centrally located air-conditioned study and recreation rooms.

BEATY TOWERS (coeducational): Each Tower accommodates approximately 400 students, with men and women on alternate floors. These buildings are entirely air conditioned and carpeted, with a unique suite arrangement on each floor that virtually eliminates traffic past suite doors. All student spaces are two-bedroom suites for four including a study-kitchenette. The commons building has a social room, library, and sundry shop.

BROWARD/RAWLINGS AREA (coeducational): The Broward complex housing 600 male and female students, while the Rawlings complex accommodates 360 male and female students. Although student rooms are not air conditioned, public facilities which are air conditioned include main lounges, libraries, recreation rooms, television rooms, cafeterias, and a sundry shop. Each floor has a community bathroom, a study room, and a community kitchen.

GRAHAM/HUME/TOLBERT AREAS: Men and women live in different buildings or in opposite wings separated by a central lobby and administrative offices. Graham and Hume Halls accommodate men and women on alternate floors. Each floor or section has community restroom and study lounge facilities. All facilities are air conditioned. Community kitchens on each floor permit students to prepare their own meals. Central public facilities include main lobbies, libraries, recreation rooms, television rooms, cafeteria, and snack bar. Student rooms are singles, doubles, and triples.

GRAHAM AREA (650 students). Consists of three residence halls which are located in the center of West Campus. The area includes the largest library on West Campus, an exercise room, and a swimming pool.

HUME AREA (720 students). The largest coeducational hall on campus. Several intramural fields and athletic courts border this popular residence area.

TOLBERT AREA (1,000 students). Consists of five residence halls including North Hall, the only coeducational luxury co-op on campus. The area is adjacent to Florida Field and a short distance from the Reitz union.

JENNINGS/YULEE AREA (coeducational): The Jennings/Yulee residence area houses about 850 students. Jennings Hall is air conditioned; Yulee Area is not air conditioned. In Jennings Hall, men and women live in opposite wings separated by a central office and public lobby. Single and double rooms are available and some rooms can be converted to suites. Each floor has community bath facilities and a study room. Community kitchens on each floor permit students to prepare their own meals. Air conditioned public facilities include main lounges, libraries, recreation rooms, and television rooms.

Yulee Hall, also located in the Yulee Area, is reserved for Juniors, Seniors, and graduate students who desire single accommodations in a coeducational setting. The rooms, originally designed as doubles, have been converted to singles and men and women are assigned to alternate floors.

Mallory Hall houses approximately 160 women in double and single rooms. The rooms are not air conditioned; however, air conditioned public facilities include the library, television room, recreation room, and the lobbies.

MURPHREE AREA (coeducational): Murphree, Thomas, Sledd, Fletcher and Buckman Halls are all located in this area. They were the first residence halls built on the University of Florida campus and accommodate about 1100 students. Suites for two or three and single, double and triple rooms are available. Most rooms are equipped with lavatories. These halls are divided into separate, vertical houses accommodating from 16 to 40 students each. Male and female students live in separate houses. There is a bath on each floor. A rathskeller is also located adjacent to the area.

FAMILY STUDENT HOUSING

The University operates six apartment villages for eligible students. To be eligible to apply for and occupy apartment housing on campus, the following are necessary:

A married student or student parent without spouse who has minor children in his/her legal care must meet the requirements for admission to the University of Florida, qualify as a full-time student as defined by his/her college or school, and continue to make normal progress toward a degree as determined by the head of his/her college or school. (A minimum of 9 credit hours is required for a full-time undergraduate student.)

The married student must be a part of a family unit, defined as (1) husband and wife with or without one or more children, or (2) a single person with minor children in his/her legal care.

Residents in all villages must furnish their own linens, dishes, rugs, curtains, or other similar items. Utilities are an extra expense and are billed with the rent.

CORRY (216 UNITS) AND SCHUCHT (104 UNITS) MEMORIAL VILLAGES, of modern brick, concrete and wood construction, contain almost an equal number of one- and two-bedroom apartments, with a few three-bedroom units in Corry Village only. These apartments are carpeted and furnished with basic equipment, as available, in the living room, kitchen, dining area, and one bedroom.

DIAMOND MEMORIAL VILLAGE consists of 208 apartments similar in construction, furnishings, and equipment to those in Corry and Schucht Villages. Special features include a community building with air conditioned study-meeting room, and a study cubicle in each two-bedroom apartment.

TANGLEWOOD MANOR APARTMENTS, located approximately 1¼ miles south of the central campus, consists of 208 furnished and unfurnished efficiency, one bedroom, two bedroom, and two bedroom townhouse units. All units are carpeted, centrally heated and air conditioned. All units have disposals and two bedroom units have dishwashers. All one and two bedroom units have one and one-half baths. Community facilities include a large recreation hall, laundry facilities, and two swimming pools.

UNIVERSITY VILLAGE SOUTH and MAGUIRE VILLAGE consists of 348 centrally heated and air conditioned one and two-bedroom apartments. Community facilities include a laundry and a community room. Individual apartments are not furnished but are carpeted. The kitchens are equipped with stove and refrigerator.

For MAGUIRE VILLAGE only: The married, or single student with dependent(s) must be part of a family with a combined gross annual income (including grants-in-aid, VA benefits, scholarships, fellowships, and grants) which does not exceed, during the period of occupancy, the following maximum income limitations: 2 persons, $9,100; 3 and 4 persons, $10,700; and 5 and 6 persons, $12,300.

OFF-CAMPUS HOUSING

Inquiries about off-campus housing should be directed to the Off-Campus Housing Office, University of Florida, Gainesville, 32611.

The office maintains extensive listings of apartments, houses, rooming units, trailers, and trailer park lots offered for rent to students, faculty or staff members. Each spring the office compiles a comprehensive list of major apartment and rooming unit developments which have been accepted by it for referral. This list is available to anyone who has filed a Request for Assistance with the office. An extensive general information and advisory bulletin is available also.

In addition to the units contained in the comprehensive list, the office has on record several hundred units in other establishments to which referrals are made after notice of availability is received from the owners.

The balance between housing supply and demand is usually tight for the Fall Quarter, continues so for the Winter Quarter but loosens for the Spring and Summer Quarters.

Mutually satisfactory rentals usually can be arranged only after personal inspection of facilities and conferences with the owners. Consequently, persons seeking off-campus housing should plan to come to Gainesville at an appropriate time in advance of the term for which they need housing. Such visits should be made on week days—not on a weekend—after advance information has been procured.

Shared unit listings are handled by Student Government in cooperation with the Off-Campus Office. Landlord-tenant problems are handled by Student Government's attorney.

COOPERATIVE LIVING ARRANGEMENTS

There are five different cooperative living groups at the University of Florida. Three of these groups are located on campus: A men's co-op is in Reid Hall and co-ed co-ops are in Buckman Hall and North Hall. The other two are located off campus.

Among the qualifications for membership are scholastic ability and reference of good character. These cooperative living groups are specifically operated by and for students with limited financial means for attending the University.

Inquiries pertaining to cooperative living on campus are made to the Director of Housing, University of Florida, Gainesville, 32611. The cooperative living organizations on campus currently include: the Reid Hall Co-op for men; the North Hall Co-op for men and women; and the Buckman Co-op for men and women. Off-campus co-ops include: the Collegiate Living Organization (co-ed), 117 NW 15th Street, and Georgia Seagle Hall (men), 1002 West University Avenue, and inquiries should be made to these addresses.

STUDENT FINANCIAL AFFAIRS

The Office for Student Financial Affairs provides financial assistance and counseling for students who need help in paying college expenses. Financial aid is awarded according to each individual's need in relation to college costs. Awards may include loan, grants, scholarships, or part-time employment and may be offered to students singly or in various combinations. Evidence of financial need is determined by the College Scholarship Service on the basis of the financial information provided in the Financial Aid Form which must be submitted to the office indicated on the form. The application period for financial aid is December 1 through March 1 for the academic year beginning the following September. Applications submitted after March 1 are accepted on a funds available basis only. A new application for financial aid must be submitted each year.

Applicants for financial assistance must complete a College Scholarship Service Financial Aid form (FAF) and University of Florida Financial Aid Supplement. Undergraduate students must apply for the Basic Educational Opportunity Grant by checking Box 83 on the FAF. An official award cannot be made until the student has been accepted for admission to the University of Florida. However, he/she should not wait for notice of acceptance but should apply as soon as possible after December 1. Aid for graduate students through the Office for Student Financial Affairs is limited to part-time employment and certain loan programs. Applications for other aid; e.g., fellowships, assistantships and loans, should be made to the head of the department of the student's major or the Dean of the Graduate School.

Scholarships

Approximately 400 scholarships are awarded through the Office for Student Financial Affairs to the most outstanding undergraduate students showing financial need as determined by the College Scholarship Service. Funds for the scholarship programs are, of course, extremely limited and in most cases amount to only $150 per quarter. Additional awards are made by donors who select the recipient directly. Students are urged to consult the resources of their home community, civic clubs, service organizations and county educators.

Part-time Employmnet

Part-time employment may be awarded to a student as part of the total financial aid package. The University of Florida offers part-time employment to approximately 2,500 students each year. In addition, many students work off-campus in the Gainesville community. Normally a student works only 15 hours or less each week and earns between $750 and $1200 per year, depending upon personal skills and experience.

Loans

Loans are available in two forms. **Long-term loans** are low interest loans with payment deferred until the student graduates, withdraws, or changes his or her status as a full-time student. A full-time student carries a minimum of 12 hours for financial aid purposes. Short-term loans are emergency loans available to meet **temporary** needs. Recipients must be full-time students in good standing with the University of Florida. The maximum amount that may be borrowed in any quarter is $200, and repayment must be

made by the first day of the last month of the quarter in which the loan is obtained. Graduate student eligibility is $250 quarterly.

Grants

Financial assistance in the form of grants from Federal and State sources is available to undergraduate students. Such grants require exceptional financial need and do not have to be repaid by the student.

CAREER RESOURCES CENTER

The Career Resources Center provides career development, job placement, and cooperative education programs for all University of Florida students and alumni.

The objective of the Center is to assist students in developing 1) viable career plans compatible with academic interests, and 2) strategies that insure marketability and employment opportunity upon graduation. Thus, the entire program focuses upon the student—during early undergraduate years, approaching graduation, and after graduation as an alumnus. The program is designed to permit students to enter at any point in their college careers. Program resources include:

Individual advisement for students seeking personal career development and job search assistance.

A career mini-school offering many different career investigations and job search preparation short courses weekly (50-minutes each). Courses include career planning, career information for minorities, job market projections for various career fields, job search planning, resume and letter writing, interview techniques, part-time and summer jobs, tips on using the Center, and other specialized information for business, industry, and education job seekers.

A cooperative education program by which students may—through supervised practical work experiences—add relevance to their classroom education, gain professional experience in chosen fields, provide a source of funds to help defray college expenses, and in many cases, become more competitive when entering the job market upon graduation.

An extensive placement service for students and alumni comprising the largest on-campus job interviewing program in the state representing all career fields, and a computer program matching students and alumni with potential employers. The program provides employers with computer printed "mini-resumes" of qualified persons. Students and alumni receive computer listings of compatible employers. The Center also publishes current employer job listings representing hundreds of positions—full-time, part-time and summer—for students, new graduates, and experienced alumni.

A career resources library containing information on several thousand employes and related occupations; employer contact lists; directories for business, industry, education and government; lists of American firms operating overseas; reference and informational material on graduate and special studies programs including fellowships and assistantships; and many other materials and resource data needed by students planning a career, entering the job market, or contemplating graduate school. A special feature of the library facilities is the "Trends Desk" containing research data on job trends, outlook and economic forecasts, labor market statistics, manpower bulletins for various career fields, special directories and publications giving reports and ratings on most employers.

An audio visual department with study carrels and a library of over 150 slide/tape, video, and audio programs covering career choices, employer information, selection of academic programs, and job search and interview techniques.

A qualification record repository and referral service is available to students and alumni. Qualification Records on over 40,000 students and alumni are presently on file. Copies of credentials sent upon request of the students and alumni to potential employers. In addition, the Center refers qualified persons on file and seeking employment to interested employers requesting candidates to fill job vacancies.

An "outreach program" in which professional staff members are available to hold seminars for student organizations, for lecture presentations to classes on all phases of career planning and job search preparation, and to develop "Career Day" programs in conjunction with colleges.

For additional information, students, alumni, and faculty are invited to visit the Center. Staff members will be happy to discuss ideas, concerns, and needs for individuals or groups.

J. WAYNE REITZ UNION

The J. Wayne Reitz Union is the official center of campus activities. The provision of facilities, services, and a varied program of activities available to all persons of the University "community" serves as the basic purpose of the Union. Policy for the Reitz Union is established by a Board of Managers, consisting of eight students and six faculty members.

During May, 1967, the J. Wayne Reitz Union building was opened. Among the facilities and services offered are music listening rooms, art gallery areas, Arts and Crafts Center, photographic darkrooms, browsing library, a games area for bowling, billiards and table tennis, public telephones, information desk, passenger and ride wanted bulletin boards, display cases, barber shop, Union Store, talent and band file. A large ballroom, an auditorium, and conference and meeting rooms are available for all University organizations. Guest rooms are available for official guests of the University, guests of students, faculty, staff, and alumni.

The Reitz Union offers a wide range of food service facilities and dining opportunities. A cafeteria and snack bar, a restaurant dining area, the Orange and Brew, the Sugar Cone, and complete catering services for small intimate groups or for a banquet for 700 persons are included in the building.

Of particular significance to the educational program of the University is the Student Activities Center located on the third floor. A distinctive physical arrangement of offices and work space for Student Government, the Student Court, and many other student groups enhances the effectiveness of the total student activitives program of the University.

The Reitz Union plans and promotes many social, cultural, and recreational activities for the campus community. Among the regular activities are art exhibits, International Dinners, non-credit courses, current and cultural films, a performing arts series, speaker's programs, out-door concerts, poetry readings, book reviews, arts and crafts sales, and campus tournaments in billiards, bowling, bridge, foosball and chess. Special activities such as receptions, dances, intracampus and inter-collegiate bridge, billiard and bowling tournaments, music appreciation listening hours, fashion shows, international activities, and special holiday parties are all a part of the Reitz Union program.

A distinctive area of the Reitz Union is the H. P. Constans Theatre, a 464-seat facility for the dramatic arts which provides excellence in design, equipment for staging and lighting, and acoustics.

UNIVERSITY COUNSELING CENTER

The University Counseling Center offers free psychological and vocational counseling to all students of the University and their spouses. The Center is staffed by psychologists whose primary interests are to facilitate the growth and development of individuals in the University setting. Psychological services are available to students experiencing academic, personal, social, or marital difficulties. Vocational services include testing, career information, and counseling. The Center offers consultative services

to University faculty and staff who are engaged in advising or counseling students.

UNIVERSITY FOOD SERVICE

Food Service provides food service in nine locations on campus convenient to residence halls and classrooms.

Students are offered high quality food at reasonable prices in campus cafeterias and snack bars, as well as the Orange and Brew, Rathskeller, and the Arredondo Room.

It is the policy of the University to provide well-prepared food at the lowest possible cost. Students may effect a savings by participating in one of the three voluntary meal plans. The seven-day plan, three meals a day; the five-day plan (Monday through Friday) three meals a day, or the five day plan (Monday through Friday) any two meals a day. For further information contact the Servomation Office, 110 Johnson Hall.

STUDENT HEALTH SERVICE

Student Health Service provides a spectrum of medical services which include primary medical care, health education, health screening programs, and mental health consultation and counseling.

The service consists of an out-patient clinic and a 14-bed in-patient unit staffed by physicians, nurses, psychologists, pharmacists, laboratory and x-ray technicians, and supporting personnel. It is housed in the Infirmary, which is centrally located on campus.

The service is a unit of the J. Hillis Miller Health Center, whose facilities are available by consultation and referral through Student Health Service. Specialty clinics are available in the Infirmary for allergy, minor surgery, orthopedics, mental health, and women's health care.

The health fee is part of the tuition fee paid by all full-time students; it is optional for part-time students. Because not all services are covered by the health fee, the supplemental student government health insurance plan is highly recommended.

A personal health history questionnaire completed by you is required before registration at the University.

SPEECH AND HEARING CLINIC

The Division of Speech Pathology and Audiology, Department of Speech, offers services without charge to any University student who has a speech or hearing disorder. This assistance is available at any time during the year and therapy sessions are adjusted to individual schedules. The student is encouraged to visit the clinic and to take advantage of this service located in the Arts & Sciences Building.

READING AND WRITING CENTER

The University Reading and Writing Center is a free service offered to students at all levels. The Center is located in Room 2107 GPA. For additional information or appointments, the office can be contacted between 8-5 Monday through Friday.

Reading. The reading program offers individual and group courses designed to improve comprehension, rate, vocabulary and study skills. These courses are developed, on the basis of an initial diagnosis, to meet the needs of each individual. Consultation and other services are also available to staff members.

Writing. The writing program is offered to students on a voluntary basis. During scheduled open time help will be provided in such areas as writing thesis statements, organizing papers, and developing essays from outlines. Texts and audio-visual materials to aid in spelling, grammar, and sentence skills are available as well.

Student Life

STUDENT ACTIVITIES AND ORGANIZATIONS

Student Government: Student Government at the University of Florida is a cooperative organization for advancing student interests and is based on mutual confidence among and between the student body, the faculty, and the administration. Considerable authority has been granted the student body for the regulation and conduct of student affairs. The criterion in granting authority to the Student Government has been the disposition of UF students to accept responsibility commensurate with the authority granted them. Student Government has several resources at its disposal to fulfill its mission, including the allocation of approximately three million dollars per year in student activity and service fees, substantial authority in the regulation of co-curricular activities, and administration of the Student Court. The University of Florida faculty and staff feel that training in acceptance of responsibility for the conduct of student affairs at the University is a valuable part of the educational growth and development of the individual student.

Student Government is a body politic, occupying its franchise under grant from the Board of Regents and subject to its continued approval. Student Government is patterned on the state and national form of government but adapted to the local needs of the Student Body. Powers are distributed into the three branches: (1) legislative, which is embodied in the student Senate; (2) judicial, which is embodied in the Student Court and the Traffic Court; (3) executive, embodied in the President and the Treasurer of the Student Body. Members of all three branches are elected directly by the Student Body, of which all UF students are members. In addition to elected offices, many appointed positions have been established in Student Government, including Cabinet and sub-Cabinet, Student Court, and Traffic Court posts.

Student Government, recognizing its limitations as a true "government", attempts to exercise influence on governments at all levels through conferences, lobbying, research, and the advancement of proposals for change.

Students may apply for various positions within the student government structure by contacting the Student Government offices on the third floor of the J. Wayne Reitz Union.

Interhall Council: The purpose of the Interhall Council is to provide an organization which will further serve as a channel of communication between Residence Area Councils, Student Government, and the Student Housing Office as well as coordinating individual Area Council activities and representing the collective interests of all residents.

The voting membership of the Interhall Council consists of two representatives from each of the Area Councils.

Dramatics: Any student has an opportunity to participate in several plays which are presented each year by the Florida Players, a dramatic group under the direction of the Department of Speech.

Student Senate: The Student Senate is composed of representatives elected from the colleges and living areas on the campus and in general acts as the Legislative Branch of Student Government.

Religious Activities: The University of Florida welcomes the contributions of religious traditions to the campus community. The churches, centers, and organizations associated with the University offer a rich variety of programs and ministries. There are also interdenominational and nondenominational activities fostered by the Department of Religion and the Campus Ministries Cooperative.

Social Fraternities. Twenty-eight national social fraternities for men have established chapters at the University. The general work of the fraternities is supervised by the Interfraternity Council, composed of one delegate from each of the representative fraternities. The national fraternities at the University of Florida are Alpha Epsilon Pi, Alpha

Gamma Rho, Alpha Phi Alpha, Alpha Tau Omega, Beta Theta Pi, Chi Phi, Delta Chi, Delta Tau Delta, Delta Upsilon, Kappa Alpha, Kappa Alpha Psi, Kappa Sigma, Lambda Chi Alpha, Phi Beta Sigma, Phi Gamma Delta, Phi Delta Theta, Phi Kappa Tau, Pi Kappa Alpha, Pi Kappa Phi, Pi Lambda Phi, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Tau Epsilon Phi, Theta Chi, and Omega Psi Phi.

Twenty women's social sororities have established chapters at the University. Sixteen have built chapter houses and three live in other housing arrangements. These living quarters serve as the center of the activities of the individual sororities. Primary jurisdiction in sorority matters is vested in the Panhellenic Council. The chapters at the University of Florida are Alpha Chi Omega, Alpha Delta Pi, Alpha Epsilon Phi, Alpha Kappa Alpha, Alpha Omicron Pi, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Phi Epsilon, Delta Sigma Theta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Mu, Phi Sigma Sigma, Pi Beta Phi, Sigma Delta Tau, Sigma Kappa, Zeta Phi Beta and Zeta Tau Alpha.

Professional and Honorary Fraternities: AGRONOMY AND SOILS CLUB; ALPHA DELTA SIGMA, Advertising; ALPHA EPSILON DELTA, Pre-Medical; ALPHA ETA SOCIETY, Allied Health Professions; ALPHA KAPPA DELTA, Sociology; ALPHA KAPPA PSI, Business Administration; ALPHA LAMBDA DELTA, Freshmen scholastic honorary; ALPHA OMEGA ALPHA, Medical; ALPHA PI MU, Industrial Engineering; ALPHA SIGMA MU, Materials Science and Engineering; ALPHA ZETA, Agriculture; AMERICAN CERAMIC SOCIETY; AMERICAN INSTITUTE OF AERONAUTICS & ASTRONAUTICS; AMERICAN INSTITUTE OF ARCHITECTS; AMERICAN INSTITUTE OF CHEMICAL ENGINEERS; AMERICAN INSTITUTE OF CONSTRUCTORS; AMERICAN INSTITUTE OF INDUSTRIAL ENGINEERS; AMERICAN INSTITUTE OF MINING, METALLURGICAL AND PETROLEUM ENGINEERS; AMERICAN NUCLEAR SOCIETY; AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS; AMERICAN SOCIETY OF CIVIL ENGINEERS; AMERICAN SOCIETY OF INTERIOR DESIGNERS; AMERICAN SOCIETY OF MECHANICAL ENGINEERS; ARNOLD AIR SOCIETY, Military; ASSOCIATION FOR CHILDHOOD EDUCATION; ASSOCIATION FOR COMPUTING MACHINERY; BETA ALPHA PSI, Accounting; BETA GAMMA SIGMA, Business and Economics; BILLY MITCHELL DRILL TEAM, Military; CAMPUS DESIGN GROUP, Architecture and Planning Design; CITRUS CLUB; COUNSELOR EDUCATION STUDENT ASSOCIATION; CRIMINAL JUSTICE ASSOCIATION; CURRICULUM AND INSTRUCTION ASSOCIATION, Education; DAIRY SCIENCE CLUB; DELTA PI EPSILON, Graduate Business Education; DELTA SIGMA PI, Business; DELTA SIGMA RHO, Intercollegiate Forensics; ENDOGENOUS RHYTHM, Zoology; EPSILON LAMBDA CHI, Engineering Leadership; ETA KAPPA NU, Electrical Engineering; FLORIDA ANTHROPOLOGY CLUB; FLORIDA BLUE KEY; Leadership; FLORIDA ENGINEERING SOCIETY, Professionalism in Engineering; FOOD AND RESOURCE ECONOMICS CLUB; FOOD SCIENCE AND TECHNOLOGY CLUB; GAMMA THETA UPSILON, Geography; GARGOYLE HONOR SOCIETY, Architecture & Fine Arts Honorary; INSTITUTE OF ELECTRICAL & ELECTRONIC ENGINEERS; INSTITUTE OF TRAFFIC ENGINEERS; JOHN MARSHALL BAR ASSOCIATION, Law; JUSTICE WATCH, Law; KAPPA DELTA PI, Education; KAPPA EPSILON, Pharmacy; KAPPA KAPPA PSI, Band; KAPPA PSI, Pharmacy; KAPPA TAU ALPHA, Journalism & Communications; LAMBDA GAMMA PHI, Veterinary Medicine; LAMBDA TAU, Medical Technology; MICROBIOLOGY CLUB; MORTAR BOARD, Honor Society; NATIONAL STUDENTS SPEECH & HEARING ASSOCIATION, Speech Pathology; NEWELL ENTOMOLOGICAL SOCIETY, Entomology; OMICRON DELTA EPSILON, Economics; OMICRON DELTA KAPPA, Leadership and Scholastics; ORDER OF OMEGA, Honorary Fraternity/Sorority Leadership; PHI ALPHA DELTA, Law; PHI ALPHA THETA, History; PHI BETA KAPPA, Scholarship; PHI BETA LAMBDA, Education; PHI CHI THETA, Business; PHI DELTA PHI, Law; PHI ETA SIGMA, Freshman Scholastics; PHI KAPPA PHI, Scholastics; PHI MU ALPHA, Music; PI SIGMA ALPHA, Political Science; PI TAU SIGMA, Mechanical Engineering; PRE-LEGAL SOCIETY; PRE-PROFESSIONAL SERVICE ORGANIZATION; PSI CHI, Psychology; PUBLIC RELATIONS STUDENT SOCIETY OF AMERICA; RHO CHI, Pharmacy; RHO EPSILON, Real Estate; RHO PI PHI, Pharmacy; SAVANT, Leadership & Service Honorary; SCABBARD & BLADE, Military Science; SEMPER FIDELIS, Military; SIGMA ALPHA IOTA, Music; SIGMA DELTA CHI, Journalism; SIGMA GAMMA EPSILON, Geology; SIGMA LAMBDA CHI, Building Construction; SIGMA PI SIGMA, Physics; SIGMA TAU SIGMA, Honorary Tutoring; SIGMA THETA TAU, Nursing; SOCIETY OF ENGINEERING SCIENCES, Engineering Sciences; SOCIETY OF ENGINEERING TECHNOLOGISTS, Engineering Technology; SOCIETY OF PHYSICS STUDENTS, Physics; STUDENT AMERICAN PHARMACEUTICAL ASSOCIATION; STUDENT ASSOCIATION IN HEALTH CARE AND HOSPITAL ADMINISTRATION; STUDENT CONTRACTORS AND BUILDERS ASSOCIATION; STUDENT NATIONAL MEDICAL ASSOCIATION; STUDENT OCCUPATIONAL THERAPY ASSOCIATION; STUDENT PHYSICAL THERAPY ASSOCIATION; TAU BETA PI, Engineering Honorary; TAU BETA SIGMA, Band; TAU SIGMA DELTA, Architecture; UNIVERSITY OF FLORIDA FORESTRY CLUB; UNIVERSITY OF FLORIDA LAW REVIEW; UNIVERSITY OF FLORIDA REHABILITATION ASSOCIATION; UNIVERSITY OF FLORIDA STUDENT AMERICAN GUILD OF ORGANISTS; VEGETABLE CROPS ROUNDTABLE, Agriculture; WILDLIFE SOCIETY; XI SIGMA PI, Forestry.

Clubs and Societies: There are more than 225 student clubs and organizations on the campus representing varied interests and activities. These include academic interest clubs; social, religious, and professional groups; hobby groups; and organizations dedicated to a wide variety of personal and community concerns. Many of the organizations are funded by Student Government through the allocation of the student activity and service fee monies.

ACADEMIC HONESTY

The University of Florida expects students to be honest in all of their University class work. Therefore, students are required to commit themselves to academic honesty by signing the following statement as part of the admissions process:

"I understand that the University of Florida expects its students to be honest in all of their academic work. I agree to adhere to this commitment to academic honesty, and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University."

This statement serves to remind students of the obligation they assume as students at the University of Florida. Matters of violations of academic honesty are adjudicated by the Student Court.

STUDENT CONDUCT CODE

Students enjoy the rights and privileges that accrue to membership in a university community and are subject to the responsibilities which accompany that membership. In order to have a system of effective campus governance, it is incumbent upon all members of the campus community to notify appropriate officials of any violations of regulations and to assist in their enforcement. All conduct regulations of the University are printed and made available to all students and are applicable upon publication in the *Independent Florida Alligator*, the *University Catalog*, the *Student Handbook*, or other reasonable means of notification.

Violation of the Code of Conduct. A student may be expelled or receive any lesser penalty for the following offenses:

1. Furnishing false information to the University with intent to deceive. (To include cheating and plagiarism).
2. Forgery, alteration, or misuse of University documents, records, or identification cards.
3. Unauthorized use, taking or destruction of public or private property on campus, or acts committed with disregard of possible harm to such property.

4. Actions or statements which by design or consequence amount to intimidation or hazing.

5. Participation in or continued attendance at, after warning to disperse by a University official, a raid on a University living unit.

6. Disorderly conduct.

7. Disrupting the orderly operation of the University as defined in Florida Statutes, Board of Regents' Policies, and the Demonstration Policy of the University.

8. Failure to comply with a University rule or regulation.

9. Violations of Housing, Interhall, and Area Council regulations.

10. Violation of conduct probation.

11. Possession, use, or delivery of illegal drugs as defined in Florida Statutes; and use of exploding fireworks as defined in Florida Statutes.

12. Possession of a firearm on the University campus except as specifically authorized by University Policy on the Possession and Use of Firearms.

13. Actions or conduct which hinders, obstructs, or otherwise interferes with the implementation or enforcement of the Student Conduct Code.

14. Failure to appear before the Committee on Student Conduct or the Director of Student Judicial Affairs and to testify as a witness when reasonably notified to do so. Nothing in this subsection shall be construed to compel self-incrimination.

15. Violation of any municipal ordinance, law of the State of Florida, or law of the United States.

For additional information regarding conduct procedures contact the Office for Student Services or consult the *Student Guide.*

INTERCOLLEGIATE ATHLETICS

The University of Florida athletic program is a comprehensive one with teams competing against regional and intersectional opponents in nine intercollegiate sports.

Florida, a member of the Southeastern Conference and the National Collegiate Athletic Association, fields athletic teams in football, basketball, cross country, baseball, track golf, tennis, wrestling, and swimming.

Physical facilities include Florida Field stadium with a seating capacity of 62,000, a baseball diamond, a completely equipped varsity tennis stadium, swimming pool, running track, two football practice fields, an 18-hole championship golf course and Florida Gymnasium, a facility which houses ample dressing and training rooms, weight rooms, meeting rooms, four practice courts and the 5,500 capacity varsity court.

Women's Intercollegiate Athletics are offered in gymnastics, golf, swimming, tennis, volleyball, softball, basketball, track and field. The program is operated under the Association of Intercollegiate Athletics for Women. Florida is in Region III, Southeast Region.

INTRAMURAL ATHLETICS AND RECREATION

Intramurals is a significant part of the total educational community at the University of Florida. The intramural program provides highly competitive and recreational activities for every segment of the university population. For unstructured leisure time activity, the students, faculty, and staff may picnic, boat and swim at Lake Wauberg, check out equipment from three equipment rooms on campus, play on any of the 18 football fields, 15 softball fields, 12 volleyball courts, 34 tennis courts, 12 four-wall handball-racquetball courts, two squash courts, four indoor basketball courts, five outdoor basketball courts, swim in the Florida pool, or exercise on the Universal Gym.

For structured competitive play, the intramural department organizes tournaments in the following leagues: All University Special Events, Co-Recreational, Men's and Women's residence halls, Student Wives, Engineering, Faculty/Staff, Fraternity, Men and Women Open, Men and Women Independent, Law, Sorority, Little Sister, Married Students, and ROTC. The Club Program offers instruction, recreational and competition, in approximately 43 clubs, including Folk Dance, Karate, Sailing, Skiing, Weight Lifting, Archery, and many more.

Student participation and student administration is a tradition in the intramural program at the University. Students officiate the games, manage the leagues, act as Student Director and Office Director in the Intramural Office, serve on the Protest Board and on the Intramural Policy Board.

The current importance and growth of recreational sports on campus is unmatched in the history of the University. We invite everyone to use this resource at the University to fulfill their leisure time interest.

AUTOMOBILE AND TRAFFIC REGULATIONS

Any student of the University of Florida is eligible to register a motor vehicle for use as authorized and to operate and park a registered vehicle on campus. The type of parking decal issued is determined by the student's local residence and student classification.

Students desiring to park on campus during restricted hours must register their automobiles or motorcyles at the University Traffic and Parking Department, 1088 Johnson Hall, during their first registration period. Failure to do so will result in a parking citation. There is a system for fines and a point system for on-campus vehicle violations. Persons failing to respond to tickets will be subject to an additional administrative fee of $5.00 and will not receive grades or an academic transcript until delinquent fines and fees have been paid.

A copy of the rules governing traffic, parking and registration of vehicles on campus may be obtained from the Traffic and Parking Department located in Johnson Hall. Each student is urged to familiarize himself with these regulations upon registering at the University.

Student Academic Regulations

Additional information relative to graduation, social activities, failure in studies, conduct, etc., may be found in the Student Handbook and the sections of the catalog containing regulations of the separate colleges and schools. Each student should become familiar with rules and regulations of the University.

READMISSIONS

APPLICATION FOR READMISSION

The information contained in this section applies only to students who have previously been admitted at any level to the University of Florida. Requirements for admission for a student seeking to enroll in the University of Florida for the first time will be found in the Admissions section of this catalog. Please consult the INDEX for page numbers.

How to Apply for Readmission: An applicant should address a request to the Office of the Registrar for application forms. Forms and directions vary with the level of readmission. The applicant should indicate in the request the college and the level of last enrollment at the University of Florida as well as the college and level for which he or she wishes to apply. Applications must be received in the Office of the Registrar by the deadline date for the term, as published in the University Calendar.

READMISSION OF STUDENTS

1. *Satisfactory academic record.*

   a. An applicant must be eligible to return to the University of Florida on the basis of one's previous academic record at this institution. If the applicant has attended any college or university subsequent to enrollment at the University of Florida, he or she must also have an average of "C" or higher (as computed by the University of Florida) on all work attempted at each institution. The applicant must also be in good standing and eligible to return to each institution previously attended.

   b. An applicant for readmission must meet the admission requirements of the college or school he or she expects to enter. (Consult the appropriate college section of the catalog for specific admission requirements.)

2. *Satisfactory conduct record*

   a. An applicant must present a satisfactory record of conduct. Regardless of other qualifications, an applicant who has experienced major or continuing difficulties with school or other authorities since the last enrollment at the University of Florida may find his or her application for readmission disapproved.

3. *Submission of Request*

   a. An applicant for readmission should indicate the name under which he or she was registered when last enrolled and the social security number.

Credits

The word credit as used in this catalog refers to one quarter hour.

DEGREES AND GRADUATION

The Board of Regents will confer the degree appropriate to the course pursued under the following conditions:

1. *Curriculum requirements:* Certification by the Dean of the college concerned that all requirements of the course of study as outlined in the college announcement, or its equivalent, as determined by the faculty of the college offering the course, have been completed.

2. *Recommendation of the faculty of the college awarding the degree.*

3. *Residence requirements:* (a) The minimum residence requirement for the baccalaureate degree is three quarters. (b) Students are required to complete the last forty-five credits applied toward the baccalaureate degree during regular residence in the college from which the student is to be graduated. Exception to this regulation may be made only upon written petition approved by the faculty of the college concerned. (c) For residence requirements for degrees in the College of Law, Medicine, Dentistry, or Veterinary Medicine, see the catalog of each college. (d) For residence requirements of the various graduate degrees, see the *Graduate School Catalog.*

4. *Physical Education Requirements:* Each student who enters as a Freshman or Sophomore must complete one quarter of Physical Education.

5. *Average Required:* In order to secure a degree, a student must have a "C" average or better in all credits required toward that degree.

6. *Two Degrees:* Two degrees of the same rank, e.g., B.A. and B.S. may be conferred upon the same individual provided that the second degree represents at least forty-five credits of additional work, with the necessary qualitative and residence requirements.

7. *Continuous Attendance:* When a student's attendance is continuous, graduation according to the curriculum under which he or she entered is permitted, provided the courses required are offered by the University. If some or all of the required courses are no longer offered, the faculty of the college concerned will make such adjustments for the individual students as are appropriate for the curriculum involved. As long as a student attends the University as much as one quarter during any calendar year, his or her residence is continuous.

8. *Summer Quarter Enrollment:* Effective September 1, 1976 all students entering a university in the State University System with less than 90 hours credit shall be required to earn at least 15 credit hours prior to graduation by attendance at one or more summer quarters. University Presidents may waive the application of this rule in cases of unusual hardship to the individual.

9. *Application For Degree:* Students expecting to graduate must file an application for the degree in the Registrar's Office on or before the date indicated in the current University Calendar of the catalog. Students must apply in the quarter in which they expect to graduate, regardless of previous applications in previous quarters.

10. *Time Limit:* To receive a degree a candidate must have completed: (a) all residence work required for graduation at least 24 hours prior to the scheduled meeting of the College Faculty voting on the candidates for degrees; (b) all extension work at least two weeks prior to the scheduled meeting of the College Faculty voting on the candidates for degrees.

11. *Time-Shortened Degree Opportunities:* A variety of programs is offered by the University of Florida which may enable students to shorten the length of the time necessary for them to complete their degree requirements. These opportunities include several credit by examination programs, and other options. For specific information, refer to the section listed in the table of contents entitled "Time Shortened Degree Opportunities." Also refer to the college descriptions for additional information.

12. *Extension Work Permitted:* (Note: Extension work as used below refers to both extension classes and correspondence study.)

   a. Students may take a maximum of eighteen credits of extension work during any academic year.

   b. Students may not take more than twelve credits of extension work during a quarter.

   c. The amount of extension work which a student may apply toward degree requirements may not exceed one-fourth of the amount required for the degree. For additional or unique restrictions on extension work allowed toward a degree, students should refer to the

appropriate section of this catalog or consult with the dean of the college concerned.

d. Students may not take, by extension work, more than eighteen of the last fifty-four credits necessary for a baccalaureate degree.

e. Simultaneous registration in on-campus and extension work is permitted provided that approval has been obtained from the dean of the college in which the student is registered.

13. *Registration of Graduate Students:* A student *must* be registered in the University for the term in which the candidate's final examination is given and at the time he or she receives a degree.

14. *Repeat Course Work:* Credit will not be allowed on repeated course work if the course that is repeated contains essentially the same course content as it did when the student initially enrulled for the course.

15. *Pending Charge of Academic Dishonesty or Code of Student Conduct Violation:* No degree will be conferred upon a student against whom there is pending an unresolved charge of either Academic Dishonesty or Code of Student Conduct violation where the penalty for such violation would likely be:

a. Suspension

b. Expulsion

c. Failing Grade

d. Any combination of the above until such time as the charge is resolved and degree requirements are met.

MAXIMUM AND MINIMUM LOAD

Some colleges have a maximum load which is stated in the catalog. In the absence of such a statement, the general University regulation applies. This regulation allows a maximum load of 15 credits for a student who earned an average below a "C" the preceding quarter of attendance. The minimum load for all undergraduate students is 12 hours.

Simultaneous enrollment in coorespondence courses, extension work at another college or university is counted in computing the maximum, but not the minimum load.

At the time of registration, a student, upon the approval of his or her dean, may register for less than the minimum or more than the maximum load. After the late registration period has closed, no student attending under the above conditions will be permitted to drop below the minimum load unless the student successfully petitions the college in which he or she is enrolled. The minimum load for fulltime benefits from the VA or Social Security is 12 hours per quarter for undergraduate students.

DUAL ENROLLMENT

1. *Definition:* Dual Enrollment, as used in this regulation, refers to a student taking on-campus courses simultaneously at BOTH the University of Florida and another institution.

2. *Dual Enrollment will be permitted ONLY under the following conditions:*

a. Approval in writing for the dual enrollment must have been secured by the student from the appropriate official at EACH institution. A copy of such approval must be furnished at the time of registration to the registrar at the University of Florida.

b. A student will not be permitted to register at the University of Florida for a course which is a part of the curriculum at the student's parent institution. This requirement also applies if courses are available at the parent institution which might be evaluated as equivalent or acceptable substitutes for the University of Florida course. The converse of these statements also applies to University of Florida students registering for courses at another institution.

c. Priority in assignment to classes at the University of Florida will be given to regularly enrolled students.

d. A student taking courses at the University of Florida will be required to register and attend classes under the University of Florida calendar.

e. The student will pay appropriate fees at the University of Florida based on the number of credit hours for which he or she is registered at this institution.

It is the student's responsibility to insure that an official transcript of work completed under a dual registration is forwarded to the parent institution. Certification to social security and veterans administration programs is also the responsibility of the individual student who must request each individual institution to furnish records as might be necessary.

NON-DEGREE REGISTRATION

A student not previously registered at the University of Florida may with college approval register for one quarter only as a non-degree student. Members of the faculty and staff and those with special permission from their college may consider registering as non-degree students for more than one quarter. Registration will be on a space available basis. Procedures for registering are available from the Registrar's Office.

GRADES

Results of student's work are recorded in the Registrar's Office as follows:

1. *Undergraduate Students:* Passing grades are A, B+, B, C+, C, D+, D, in order of excellence, and S-Satisfactory. Failing grades and E — Failure, I — Incomplete, U — Unsatisfactory, X — Absent from examination, EW — Dropped for nonattendance or unsatisfactory work, and WF — Withdrew failing.

Grades of I and X are considered as failing grades. They must be changed to passing grades in accordance with the dates set in the University Calendar, or be converted to grades of E.

In special situations where it is not possible to assign regular grades at the end of the term, a deferred grade may be assigned. The symbol for a deferred grade is a grade of H. This grade may be assigned only in special cases, such as modular course, confined to infirmary, and similar circumstances. A grade of H will not be computed in a student's grade point average.

2. *Graduate students:* Passing grades for graduate students are A, B+, B, C+, C and S. Grades of "C+," and "C" in courses below 500-level are acceptable for credit toward graduate degrees only if the total program meets the B-average requirement. C+ and C grades in 500-level courses and above count toward a graduate degree only if an equal number of credit hours in courses numbered 500 or above have been earned with grades of B+ and A, respectively.

SATISFACTORY-UNSATISFACTORY GRADE OPTION

It is the University's desire to allow students to receive as broad an education as possible. Therefore, students are encouraged to take courses in disciplines in which they may not have the proper background. They may take such course work as electives and receive a grade of S — satisfactory or U — Unsatisfactory. These grades become a part of a student's record, but do not count in the grade point average as computed by the University of Florida. NOTE: Other agencies or institutions might count the grade of U as a failing grade in their grade point average computation.

To be eligible to enroll under the S-U option, a student must 1) be in good standing — may not be on any type of probation, or warning, 2) be classified as an undergraduate student, and 3) have approval from proper university officials.

Only one course will ordinarily be approved in any one quarter. Approvals for exception to this policy must be obtained from the dean of the college in which the student is registered. Standard exception — Required Physical Educa-

tion courses may be taken under the S-U option even when the option has been elected in another course.

The deadline for electing the S-U option is the last day for dropping or adding a course as published in the calendar. In addition, students who elect the S-U option may subsequently request that their instructors assign a standard grade.

AVERAGES

1. *Definitions:* The term "average," as used in any university regulations concerning probation or suspension, always refers to the average on work attempted at the University of Florida. Grades received at other institutions are not averaged with grades received at the University of Florida for the purpose of meeting any University average requirement. Most honorary societies take into consideration the quality of the work done at other institutions in meeting any average requirements they may have.

2. *How computed:* Averages are determined by computing the ratio of grade points to quarter hours recorded as attempted. Grade points are established by equating each quarter hour as follows: A with 4.0, B+ with 3.5, B with 3.0, C+ with 2.5, C with 2.0, D+ with 1.5, D with 1.0, and E, WF, EW, I, and X with 0.0. In computing averages, a course repeated is counted as many times as grades for it are recorded. Hours for grades of S and U are not computed in the University of Florida grade point average.

3. *Grade Point Averages:* Students' grade point averages will be based on their overall work at the University of Florida. That is, when students are admitted to the University of Florida their grade point averages begin and their academic averages will be based upon work taken at the University of Florida. While work transferred from other institutions toward a degree program at the University of Florida will count in total hours earned, such hours will not be a part of the University of Florida grade point average.

PROBATION, SUSPENSION, AND EXCLUSION FOR ACADEMIC REASONS

The University of Florida is responsible for providing the best possible education in an economical and efficient manner. In order to discharge this responsibility, the University expects and requires reasonable academic progress from its students. Continuation of students who have demonstrated a lack of the necessary ability, preparation, industry, or maturity to benefit reasonably from a program of university study is incc istent with the University's responsibility as a tax supported institution.

The University of Florida Senate has enacted regulations covering probation, suspension, and exclusion. These regulations are directed toward enforcing the academic standards of the University. The academic standards of the University require both the maintenance of grade point averages consistent with a reasonable chance of satisfactory completion of the University programs and reasonable conformance to the catalog description of the program of study in which the student is engaged. Any college of the University may specify additional academic standards and students are responsible for observing the regulations pertaining to such standards.

PROBATION BECAUSE OF UNSATISFACTORY ACADEMIC ACHIEVEMENT

The purpose of academic probation is to recognize formally the fact that a student is not making satisfactory progress.

The conditions of academic probation are intended to: (1) relate to quality of achievement below standards required ultimately to graduate; (2) recognize unsatisfactory work at an early date; (3) be sufficiently significant to make clear to the student, and the administration, the short-comings of the student's performance; (4) provide occasion for counseling; (5) give students whose ultimate success is doubtful further opportunity to demonstrate adequate performance.

All undergraduate students:

A student with less than a 2.0 grade point average overall for University of Florida work shall be placed on scholarship warning if he or she has a grade point deficit which is less than ten.

A student with less than a 2.0 grade point average overall for University of Florida work shall be placed on scholarship probation if he or she has a grade point deficit of ten or more, but less than twenty.

Any student who is eligible to return to the University after a suspension because of academic reasons will be placed on final scholarship probation for his or her next quarter.

In addition to University probation, students may be placed on probation by the colleges in which they are registered if they do not maintain normal academic progress in the program of study in which they are engaged.

CONTINUATION OF PROBATION

All Undergraduate Students:

A student's scholarship warning shall be continued as long as he or she has a grade point deficit of less than ten. A student's scholarship probation shall be continued as long as he or she has a grade point deficit of ten but less than twenty. If the grade point deficit places him or her in another probation category, the student shall be subject to the provisions of that category.

REMOVAL OF PROBATION

All Undergraduate Students:

Scholarship probation or scholarship warning will be removed when a student's grade point deficit has been reduced to zero.

Removal of college probation:

A student will be removed from college probation when it is deemed by his or her college that the student is making satisfactory academic progress in the program of study in which he or she is engaged.

SUSPENSION

The purpose of suspension from the University for academic reasons is to remove from the University community those students who would not ultimately meet requirements for graduation if they continued at their current level of progress.

The conditions of academic suspensions are intended to (1) select students whose performance indicates that they will not fulfill the requirements for graduation; (2) encourage students to leave the University as soon as a high probability of failure is evident.

All undergraduate students:

Students with a grade point deficit of twenty or more in their University of Florida work shall be suspended from the University for one quarter.

A student re-enrolling after a one quarter suspension will be on final scholarship probation. If the grade point deficit is twenty or more at the end of the quarter the student re-enrolls, he or she will be suspended without the possibility of re-registering, except by committee action.

EARNING CREDIT WHILE SUSPENDED

A student under any kind of academic suspension at the University of Florida may not earn credit toward a degree at the University of Florida by taking work in residence at another institution or through extension or correspondence courses.

However, a student who was suspended for academic reasons and who has not yet earned the Associate of Arts Certificate who subsequently graduates from an accredited Florida Community College may appeal to the Petitions Committee for reinstatement. The Petitions Committe may then, upon the recommendation of the college in which the student wishes to enter, admit the student on academic probation to that college or school. Credits earned by such students while under suspension from the University of Florida may be transferred in accordance with other rules and regulations of the University of Florida.

EXCLUSION

Lower division students:

A University College student who has attempted 125 quarter hours (this includes all work accepted by transfer and all work attempted at the University of Florida) shall be ineligible for further registration at the University unless he or she is admitted to an upper division degree program.

All undergraduate students:

A student may be excluded from a program of study by the College responsible for the program if the student fails or refuses to maintain normal academic progress. Such exclusion does not prohibit the student from enrolling in other programs or colleges if he or she meets the requirements.

Graduate students:

Graduate students may be denied further registration in the University or in their graduate major when their progress toward completion of their planned graduate program becomes unsatisfactory. Unsatisfactory progress has been defined by the Graduate Council to include failure to maintain an accumulative grade average of B in all work attempted in the Graduate School.

DROPPING COURSES

No student will be allowed to drop a course during the last two weeks of regularly scheduled classes without receiving failing grades. Any student seeking an exception to this policy must petition the University Petitions Committee.

WITHDRAWALS

All undergraduate students:

It is the responsibility of each student to make every effort to complete the full quarter at the University. If any student withdraws after the date published in the catalog, he or she shall be assigned grades of WF (withdrew failing) in all courses, and will be subject to the suspension and exclusion regulations.

A student on scholarship probation who withdraws from the University prior to the final date published in the catalog will be continued on scholarship probation for the next quarter.

ABSENCES OR UNSATISFACTORY WORK

Absences count from the first meeting of the class rather than from the date the student first registers for a class.

Students Classified 1 (Freshman)

1. If any student accumulates absences or fails to do class work to the extent that, in the opinion of the instructor, further enrollment appears to be of insufficient value for him or her to continue or detrimental to the best interests of the class, it shall be the responsibility of the instructor to warn such student in writing that further absences or poor work will cause him or her to be dropped from the class with a failing grade. When possible, this warning should be delivered personally; in addition to this procedure, a notification should be given to the Office of the Registrar for mailing to the proper address. All such warnings should be reported immediately to the department chairman.

Should any subsequent absences or failure to do classwork occur, the student shall be dropped from the class with a failing grade. The instructor should initiate this procedure by giving the Registrar written notice.

If the instructor is using a system whereby a given number of absences is allowed, the instructor is authorized to give double "cuts" for any absence incurred during the last class meeting before an official university holiday and the first class meeting following an official University holiday. For example, if a student cuts the last class before Homecoming holiday, the instructor would be authorized to count the student absent twice.

If the instructor does not use such a system, he or she is, after warning the class, either at the beginning of the course or several periods in advance of the forthcoming holiday, authorized to drop the offending student(s) at once. When a student is dropped after a class warning, the notice to the Registrar must so state.

2. *NINE-DAY RULE:* No student shall absent himself or herself from the University for more than nine scholastic days per quarter in order to participate in athletic or in extracurricular activities. (A scholastic day is any day on which regular class work is scheduled.)

The nine-day rule applies to individual members of the group rather than to the group as a whole. Consequently, a schedule of more than nine days for any group should be rotated so that no student is absent from the campus for more than nine scholastic days.

A student who has been warned for absences or unsatisfactory work in any class should not incur additional absences in that course, even though he or she has not been absent from the University for nine scholastic days. It is the responsibility of the student to see that his or her class work and attendance are satisfactory.

Students classified other than 1 (Non-Freshmen):

Attendance in class is optional with students after successful completion of the Freshman year (45 quarter hours credit). Nevertheless, students themselves remain fully responsible for satisfying the entire range of academic objectives as they are defined by the instructor in any course.

Post Baccalaureate Students:

The probation, suspension, and exclusion regulations that apply to undergraduate students also apply to post-baccalaureate students.

CLASSIFICATION OF STUDENTS

Students will be classified by the Registrar each quarter as follows:

0. Special transient or other non-degree students who have been permitted to register at the University of Florida will be classified as 0.

1. A student with less than 45 hours credit will be classified as 1.

2. A student who has earned 45 quarter hours or more, but less than 90, will be classified as 2.

3. A student who has earned 90 quarter hours or more, but less than 135, will be classified as 3.

4. A student who has earned 135 quarter hours or more will be classified as 4.

5. A student who is a candidate for a degree in a program which normally requires 15 quarters and has earned 180 quarter hours or more will be classified as 5.

6. Post-Baccalaureate students: Degree-holding students who have been admitted to post-baccalaureate status will be classified as 6.

7. A graduate student who is seeking a Master's degree will be classified as 7.

8. A graduate student who has earned a Master's degree, or has earned 54 or more hours while seeking a degree beyond the Master's degree (but has not been admitted to doctoral candidacy), will be classified as 8.

9. A graduate student who has been admitted to doctoral candidacy will be classified as 9.

PETITIONS AND APPEALS

In case the operation of a student academic regulation appears to result in an undue hardship on an individual student, he or she may petition for waiver of the regulation.

When petitions pertain to requests for change of schedule after the date authorized for change, exceptions to minimum-maximum load regulation, or permission to drop a course without a failing grade after the drop date, such petitions should be presented to the School or College in which the student is enrolled. Petitions approved by the School or College must be reported to the Registrar's Office before the action becomes official.

All other petitions should be presented to the Registrar who will refer them to the University Senate Committee on Student Petitions. No petition for readmission may be filed after regular registration has started for the quarter.

The student seeking waiver of regulation through petition must remember that no committee on petitions can direct an instructor to reinstate a student dropped from a course for absence or unsatisfactory work, nor can the Senate Committee require any college or school to grant a degree by waiving any of these regulations.

ADMINISTRATIVE PROVISIONS

All actions taken under these regulations shall be reflected by appropriate notations on the student's record.

MAINTENANCE OF STUDENT RECORDS

The Registrar's Office maintains students' academic records. A progress report is sent to each student at the end of the term indicating his or her grades, cumulative hours and grade points, probationary status, if any, and degrees awarded, if any.

CONFIDENTIALITY OF STUDENT RECORDS

The University of Florida assures the confidentiality of student educational records in accordance with State University System rules, state statutes, and the Family Educational Rights and Privacy Act of 1974, known as the Buckley Amendment.

In general, a present or former student has the right to personally review his or her own educational records for information and to determine the accuracy of these records. Parents of dependent students, as defined by the Internal Revenue Service, have these same rights. A photo I.D. or other equivalent documentation, or personal recognition by custodian for record will be required before access is granted.

Time Shortened Degree Opportunities

The University of Florida provides numerous opportunities by which students may accelerate their academic careers and reduce the overall length of time spent in completing degree requirements. These opportunities are explained below:

1. *Early Admission:* The Early Admission program allows superior students to be admitted to the University following completion of the Junior year in high school. Applications are encouraged and will be considered on an individual basis by the Admissions Committee. For additional information, refer to the Admissions section of the catalog.

2. *Dual Enrollment:* Dual Enrollment refers to a student taking on-campus courses simultaneously at both the University of Florida and another institution. For example, a high school student could register at the University as a non-degree student. The credits earned prior to high school graduation could then be accepted for advanced standing placement and degree-credit when the student is admitted to the University. For more information, high school students may refer to the description of non-degree registration within the Student Academic Regulations section.

University of Florida students may also earn additional credit through the dual enrollment program. For more information, refer to the discussion of dual enrollment within the Student Academic Regulations section.

3. *Increased Course Load:* Capable students who register for more than the normal 15 hours per quarter may complete the traditional four-year span within three years.

4. *Year-Round Attendance:* Students attending the University every quarter, including Summer sessions, may advance their graduation date by as much as three quarters.

5. *Credit by Examination:* A student may participate in a variety of credit by examination programs in order to earn credit toward a degree awarded by the University of Florida. Credit received from one examination program may not be duplicated by another. The various credit by examination programs are explained below:

Advanced Placement Program: This credit by examination opportunity is sponsored by the College Entrance Examination Board. Under this program, a student entering the University offers a nationally graded examination as evidence of completion of a college level course taken in high school. If the results of the examination meet the minimum requirements listed below, the student may receive University credit for courses covering similar material.

Advanced Placement Examination	Statewide Course Designation	Minimum Score Required for Credit	Maximum Quarter Hours Credit
American History	AMH	3, 4, or 5	5 or 10*
European History	EUH	3, 4, or 5	4 or 8*
Mathematics	MGF	3, 4, or 5	5, 10, or 15*
Biology	BSC	3, 4, or 5	3, 6, or 9*
Chemistry	CHM	3, 4, or 5	4
Physics	PHY	3, 4, or 5	5
Languages	Variable	3, 4, or 5	5, 10, or 15*
English	ENG	3, 4, or 5	3, 6, or 9*
Classics	CLA	3, 4, or 5	4

College Level Examination Program (CLEP): The College Level Examination Program is another type of credit by examination opportunity sponsored by the College Entrance Examination Board. By presenting appropriate scores, students may receive as many as 45 hours credit toward completion of general education requirements. Their scores on the CLEP general examinations must meet the minimums established by the State University System. In addition, students who plan to apply for credit must do so before enrolling or, at the latest, prior to the end of their first term at the University. CLEP testing is periodically available on the campus and is administered by the Office of Instructional Resources.

In accord with the Articulation Agreement (agreement between public community colleges and public state universities on the acceptance of credit by transfer), the University of Florida awards credit for CLEP scores at the 50th percentile based on national men-women Sophomore norms. We are indicating below the guideline for the awarding of credit.

CLEP General Examination	Statewide Course Designation	Minimum Score Required for Credit	Maximum Quarter Hours Credit
English	ENG	Scale Score 494	9
Social Sciences	SSI	Scale Score 488	9
Biology	BSC	Sub Score 50	4.5
Physical Sciences	PSC	Sub Score 49	4.5
Humanities	HUM	Scale Score 489	9
Mathematics	MGF	Scale Score 497	9

Additional credit may be awarded for satisfactory scores on the CLEP subject area examinations.

Departmental Examinations: A student may also receive credit through the challenge of departmental course examinations. For specific information, contact the departments or colleges.

*The amount of credit awarded is determined by the test score.

The Lower Division
University College

BEHAVIORAL STUDIES
BIOLOGICAL SCIENCES
ENGLISH
FUNDAMENTAL MATHEMATICS
HUMANITIES
PHYSICAL SCIENCES
SOCIAL SCIENCES

University College

The University College offers programs in general education and assists its students in selecting their major prior to admission to the college from which they will obtain their bachelor's degree. It awards an Associate of Arts certificate to those who have successfully completed 96 credits of academic work, including the general education course work required in their major.

The University College is a constituent part of the University of Florida. Its special mission is to provide students with a critical understanding of the major fields of human knowledge and their interrelationships. To furnish this understanding, therefore, the College provides a system of general education courses that cuts across specialized fields to supply an introduction to the methods and conceptual structures in physical sciences, the social sciences, the behavioral sciences, and the humanities.

The Department of Physical Sciences explores the interaction of man and nature and investigates the impact and meaning of physical reality for the individual and society. The Department of Social Sciences examines social systems and major social institutions, tracing the historical development of these institutions und the collective whole which produces them. The Department of Humanities seeks to explore the experiential and aesthetic dimensions of human existence by focusing on classical and contemporary works in the arts and literature. The Department of Behavioral Studies explores major perspectives on the individual and his relationship to his environment as expressed through various social scientific disciplines. Course work in English, mathematics and the biological sciences is also part of the general education program.

This curricular structure seeks to provide a basic understanding of the human condition as it is reflected in, dependent on, and influenced by these major segments of human activity. Through this experience, students can develop a sense of the excitement and challenge of intellectual exploration and a grasp of the tools, techniques, barriers, and achievements of the human mind.

ACADEMIC ADVISEMENT

Initial registration as a University College Freshman for each Fall class is conducted during the preceding Summer months. Students and their parents have an opportunity to attend one of several two-day programs. Notices concerning this are mailed in the late Spring to those students who have been admitted by the University Admissions Office. At these Summer Registration Programs, students and parents attend sessions relating to career choice, student activities, helping services and course selection. Each student meets with a University College academic adviser who assists in selecting courses to take in the Fall.

Those fall students who cannot attend a Summer Registration Program confer with academic advisers as a part of the registration period held in the week prior to the beginning of classes in the Fall. Students entering college in the Winter, Spring or Summer quarters also have advisement conferences as a part of the registration period prior to classes.

In the latter part of each quarter, students register for their next quarter. Again academic advisers are available to discuss course selection. It is expected that students shall accept responsibility for fulfilling curricular requirements as stated in the catalog and students who are making successful progress are not required to see an advisor when registering. Students who are changing majors or who are not maintaining a "C" average are urged to talk to an adviser about course selection.

In the first few days of each quarter (see deadlines in calendar printed on early pages of this catalog) students should review their course selection and add or drop courses if needed to make a reasonable load for the quarter in view of past grades and current goals. If, during the quarter, a student feels he must drop a course because of illness or other emergency he will find academic advisers in the University College office available for discussion of the problem. Advisers are also available to help the student define any other academic problem and find corrective measures.

COUNSELING AND RELATED SERVICES

In addition to assistance from academic advisers, University College students may find that one or more of the following offices can be of assistance in solving personal problems, career selection problems or problems relating to deficiences in academic skills. The Student Affairs section of this catalog describes their specific services.

1. Reading and Writing Center
2. Speech and Hearing Center
3. Student Health Service
4. University Career Planning & Placement Center

In addition, the University Vocational and Psychological Counseling Center provides professional psychological services to students. These include vocational guidance, career information, assistance with academic problems, specialized testing, marriage counseling and personal counseling. Any student may apply in person for such services as he deems necessary. No charge is made. The Counseling Center offers consultative services to University faculty and staff who are engaged in counseling students. Close relationships are maintained with deans, University College advisers, housing personnel, the Student Health Service, and religious centers, for the purpose of expediting both counseling and consultative services.

METHODS OF COLLEGE ACCELERATION

Details concerning acceleration are provided in the part of the catalog entitled "TIME SHORTENED DEGREE OPPORTUNITIES".

Students who obtain credit via CLEP or Advanced Placement must do so before starting college or, at the latest, prior to the end of their first term at the University. Students who obtain general education credit by examination may take further work in the areas covered, using it for elective credit. Some credit by examination may not serve to accelerate a student's program because the specific course requirements of his major are not satisfied by general subject matter credit.

A student may choose to attend four academic quarters each year. This would enable him to accomplish the work of four academic years in three calendar years. Students may take such Summer work at their local community college prior to completion of 96 credits. After completion of 96 credits only work taken at accredited colleges or universities (not junior colleges) is accepted as transfer credit. Students are urged to discuss any such plans with a University College academic adviser prior to enrolling in courses at another school.

Unusually able students may choose to accelerate by carrying heavier than average course loads rather than applying themselves more deeply to normal loads. In some majors such a student might trim one to two quarters off of the time required for his degree; however, at considerable risk to the depth and quality of his education.

SPECIAL COLLEGE PROGRAMS

1. THE SPECIAL SERVICES PROGRAM

This program is designed to give educationally disadvantaged students who qualify for admission by evidence of strong motivation and ability, assistance in developing those academic skills needed for successful progress in the University of Florida. The program consists of counseling,

special assistance in reading and study skills, structured study experience via the Office of Instructional Resources Teaching Center and tutoring. In addition efforts are made to obtain some financial assistance in the form of jobs, loans or scholarships for students engaged in the program. Admission to the Special Services Program is selective and only a limited number of students can be engaged.

2. THE COLLEGE HONORS PROGRAM

This program is limited to students from each entering class who are issued special invitations to participate. These students become members of small tutorial classes. The small size of the classes and the high quality of the students make possible deep penetration into course materials and encourage independent work. The students develop their critical faculties through extensive reading, work on research papers, and oral performance in class.

The Associate of Arts with Honors is given to students in the College Honors Program who qualify for the certificate and who complete at least 27 quarter hours in the program and have an overall 3.0 average. The Associate of Arts with High Honors is given to students in the Program if they complete at least 36 quarter hours in the Program and have an overall 3.0 average.

GENERAL EDUCATION AND THE ASSOCIATE OF ARTS CERTIFICATE

The University College has primary responsibility for the administration of the general education program of the University. To this end its departments provide general education courses and the college awards the Associate of Arts Certificate of the University. All graduates of the university must complete the general education program specified for their major and receive the Associate of Arts Certificate prior to graduation. University college students may transfer to the college of their major when that college approves. All general education requirements must be met prior to graduation from that college. Applications to change college are obtained from the Registrar. Students who maintain a 2.0 average may, barring suspension, remain in the University College beyond 96 credits to complete requirements for admission to the college of their major except that no student may remain in the University College beyond 125 credits.

In planning each quarter's program the student should obtain some balance of general and special education, of science and non-science. The undecided student should be careful to make progress in his general education while trying out courses in specific majors. Typically a student completes the greater part of his general education in the first two years while also taking the preprofessional courses specified for his major.

The Associate of Arts Certificate will be awarded upon completion of:

1. 96 credits including authorized credits in general education as indicated for the student's major.
2. An overall C average.

Application forms for the Associate of Arts Certificate are available from the Registrar and should be returned to him.

AUTHORIZED COURSES FOR GENERAL EDUCATION

The following courses have been approved by the University College for use in satisfying general education requirements. In selecting from among these authorized courses, the student should keep in mind that the general education part of his university program should serve to increase his fund of knowledge outside his major and should broaden his intellectual horizons. He must not, therefore, select courses in only one discipline nor use courses within the scope of his major to satisfy general education requirements. Only in strongly sequential and crowded majors such as mathematics and science is it permissible to use courses in the major for both purposes. In selecting his courses the student should study course descriptions in the back of the catalog, since course titles alone give insufficient information. Stated prerequisites must be adhered to. A student who wishes to use a course not listed below for satisfaction of general education requirements must have it authorized by a University College academic adviser. University College academic advisers are authorized to approve courses in addition to those listed in satisfaction of general education requirements when reasonable. They routinely do so in the case of courses transferred from junior colleges and other universities.

NOTE: Students are urged to study the course descriptions in the back of the catalog so as to take courses in their proper sequence.

MATHEMATICS (Minimum Credits Required) 4

MGF 1113 — Fundamental Mathematics
MGF 1114 — Fundamental Mathematics: Special Topics
Any Mathematics course
Any Statistics course

ENGLISH (Minimum Credits Required) 9

Students are expected to begin their course work in English with ENC 1102 and follow this with two other English courses. Students receiving a grade of C or below in ENC 1102 are advised to take ENC 1418. ENG 1200, ENG 1400, ENG 1710, and ENG 1210 are particularly designed for freshmen, but courses numbered 2000 and above are open to those who are qualified. Students should see their English instructors or an adviser for suggestions of appropriate courses.

SOCIAL SCIENCES (Minimum Credits Required) 9

The following Social Sciences courses have been specifically designed as interdisciplinary courses to fulfill general education requirements. They may also be used as electives.

SSI 2110 — American Institutions: Culture and the Socializing Institutions
SSI 2120 — American Institutions: The Emergence of the Economic and Political Institutions
SSI 2122 — American Institutions: The Economic and Political Institutions of Urban America
SSI 2121 — American Institutions: Economic and Political Institutions from Minority Group Perspectives
SSI 2221 — American Institutions: America's Role in World Affairs
SSI 2201 — American Institutions in World Perspective
SSI 293S — Seminar in American Institutions
ASN 2001 — Asia and its Peoples
SSI 2114, 2124, 2224 — American Institutions: College Honors
SPC 3710 — Patterns of Intercultural Communication
SSI 3127 — American Institutions: Special Topics
SSI 3227 — American Institutions: Special Topics

One or more of the following courses, while not originally designed for general education, may also be used provided the student does not take more than one course from each field.

Instead of SSI 2110 American Institutions:
AMS 2030 — Introduction to American Studies
ANT 2410 — Cultural Anthropology
ANT 2402 — Anthropology and Modern Life
SOC 2000 — Principles of Sociology

Instead of SSI 2120, 2122, 2121 American Institutions:
ECO 2000 — Economic Concepts and Institutions
ECO 2620 — Economic History of the United States
AMH 2010 — United States to 1877
AMH 2020 — United States since 1877
POS 2041 — American Federal Government
POS 2112 — American State and Local Government

Instead of SSI 2221, 2201 American Institutions:
GEO 2500 — Geography of World Economics
GEO 2420 — Geography of World Societies
EUH 2002 — Western Civilization Since the 18th Century
INR 2002 — International Relations

BEHAVIORAL STUDIES (Minimum Credits Required) ... 6

The following BES courses are specifically designed to satisfy general education requirements.

BES 1310 — Issues in Human Behavior
BES 2522 — The African Experience
BES 2121 — Creative and Critical Thinking
BES 2132 — Decision Making
BES 2013 — Behavioral Studies: Special Topics
MAF 2402 — Human Sexuality and Society
BES 23S1 — Power and Violence
BES 2431 — Simulated Societies
BES 2412 — Cybernetics and Society
BES 2391, 2392, 2393 — Behavioral Studies: College Honors
BES 3141 — The Individual and the Religious Experience
BES 3241 — Advanced Topics in Human Sexual Behavior

Other courses which may be used are:
PCO 3714 — Personal Growth
MAF 2200 — Marriage and the Family

HUMANITIES (Minimum Credits Required) 12

The following HUM courses have been specifically designed as interdisciplinary courses to fulfill general education requirements. They may also be used as electives.

HUM 2020 — The Humanities Forum
HUM 2190 — Ascent of Man
HUM 2210 — Western Humanities
HUM 2230 — Western Humanities
HUM 2250 — Western Humanities
HUM 2410 — Asian Humanities
HUM 2420 — African Humanities
HUM 2930 — The Humanities: Special Topics
HUM 2229, 2239, 2259 — Western Humanities: College Honors
HUM 3220 — Hellenistic/Judaeo-Christian Trad.
HUM 3251 — Contemporary Humanities
HUM 3420 — Advanced African Humanities
HUM 3473 — Humanities of Avante Garde
HUM 3831 — Hellenism

One or more of the following courses, while not originally designed for general education, may also be used provided that the student does not take more than one course from a particular field.

CHI 3500 — Chinese Culture
CLT 2370 — Myths of the Greeks and Romans
CLA 2700 — Greek Life and Letters
CLT 2371 — Religion of the Greeks and Romans
CLT 3291 — Greek Drama
CLT 3340 — Greek and Roman Epic
EUH 2000 — Western Civilization: From Early Times Through Middle Ages
EUH 2001 — Western Civilization: From Renaissance to the 18th Century
EUH 2002 — Western Civilization: From 18th Century to Present
FRT 2276 — The French Novel of 19th & 20th Centuries in English Translation
HUM 2510 — Introduction to the Fine Arts
LIN 2000 — Language and Man
LIT 4930 — Literature and Opera (Variable Topics)
MUL 2011 — Introduction to Music
MUL 2112 — Masterworks
MUL 2113 — Structure
PHI 2631 — Contemporary Moral Issues
REL 2010 — Introduction to the Study of Religion
REL 3116 — (LIT 4930) Myth in Film and Literature
REL 3210 — Hebrew Scriptures
REL 3340 — Religions of Asia
REL 3420 — Contemporary Religious Thought
REL 3494 — Images of Man — West Trad: Roots
REL 3495 — Images of Man—West Trad: Modern
REL 3600 — Introduction to the Study of Judiasm
SPT 2601 — Don Quixote in English Translation
THE 2000 — Theatre Appreciation

PHYSICAL SCIENCES .....(6-9 credits — see note below)

The following CPS courses have been specifically designed as interdisciplinary courses to fulfill general education requirements. They may also be used as electives.

ISC 2400 — Fundamentals of Physical Science A
ISC 2401 — Fundamentals of Physical Science B
ISC 2402 — Fundamentals of Physical Science C
ISC 2452 — Man's Interactions with the Physical Environment
ISC 2453 — Physical Sciences: Energy and Society
ISC 2454 — Physical Foundations of Environmental Sciences
ISC 345S — Water and Society
PSC 1420 — The Physical Sciences
PSC 1502 — The Physical Sciences
PSC 1510 — The Physical Sciences
PSC 2121 — Natural Regions
PSC 2191L — Laboratory in the Physical Sciences
PSC 2501 — Our Environment
PSC 2507; 2707; 2901 — The Physical Sciences: College Honors
PSC 2701 — The Scientific Basis of Technology
PSC 2936 — Physical Sciences: Special Topics
PSC 3402 — Space and Society
PSC 3900 — Men and Concepts

Students majoring in science normally fulfill their physical science requirements by taking Chemistry (2040, 204S, 2055 sequences) or other professionally oriented science sequences.

One or more of the following courses, while not originally designed for general education, may also be used provided the student does not use more than one course from each field.

AST 1002 — Descriptive Astronomy
CHM 1020C — Chemistry and Society
GLY 1000 — Exploring the Geological Sciences
MET 1010 — Introduction to Weather and Climate
PHY 2032C — Physics for Skeptics

BIOLOGICAL SCIENCES — (6-9 Credits — See note below)

CLEF — Elementary Biological Sciences (CLEP)

The following CBS courses are designed for general education. They may also be used as electives.

APB 2150 — The Biological Sciences
APB 21S1 — The Biological Sciences
APB 21S3 — The Biological Sciences
BSC 2930 — The Biological Sciences: Special Topics
APB 2150L — Laboratory in Biological Sciences
APB 2991, 2992, 2993 — The Biological Sciences: College Honors

The following courses, though more professionally oriented, satisfy the requirement for certain science majors and may be used by others.

AGG 2501 — Agriculture in the Environment
ANT 3511 — Physical Anthropology
BOT 1020C — Introductory Botany
BOT 2021C — General Botany
PCB 3033C — Introduction to Ecology
ECH 3783 — Technology and Survival
ENV 3003 — Environmental Quality and Man
FOR 2010 — The Ecosystem — Man — Resource Relationships
FOS 2001 — Man's Food
HUN 2201 — Human Nutrition
APB 3223 — Basic Anatomy and Physiology
APB 2170 — Microbiology
SOS 3215C — Agriculture and Environmental Quality
ZOO 2010C — Introductory Zoology Laboratory
ZOO 2011C — Principles of Animal Biology
PCB 3673 — Evolution Today

NOTE: The science requirements call for at least six credits in one science and nine credits in the other.

PLANS OF STUDY BY COLLEGE OF MAJOR

On the following pages, specific general education requirements are listed for each college and/or major. Students are expected to follow the program of general education specified for their particular baccalaureate goal. In other words the particulars of a student's general education depend upon his choice of majors and his choice of courses within the limits set by the major. Associate of Arts Certificates are awarded on this basis. Preprofessional courses for the student's first two years are also listed.

Suggested course sequences are not at all rigid. Each student should adjust his program to fit his ability and background. Academic advisers will help do this.

ACCOUNTING

Students planning to enter the School of Accounting should take, while in the University College, the following program of study. Students with questions concerning the Preprofessional Requirements may wish to contact an adviser in the School of Accounting.

General Education Requirements

	Credits
*ENC English	9
**MAC 3311 Analytic Geometry and Calculus 1	5
**PHI 2100 Logic	4
American Institutions	9
The Humanities	12
***Physical Sciences	7-10
***Biological Sciences	6-9
Physical Education	2

Preprofessional Requirements

	Credits
****ACC 2001 Elementary Financial Accounting	5
****ACC 2103 Financial Accounting 1	4
CAP 2010 Introduction to EDP	4
ECO 2013-2023 Basic Economics	16
MAC 3312 Analytic Geometry and Calculus 2	5
STA 3023 Introduction to Statistics	4
Electives to make a total of 96 hours	

*Since the School of Accounting requires upper division writing courses students are required to take ENC 1102 and ENC 1418.

**MAC 3311 and PHI 2100 are also considered preprofessional courses.

***Students are expected to complete 16 hours of the Sciences.

****The ACC 2001 and ACC 2103 sequence is required for Accounting Majors. A grade of "C" or better is required in these courses to register for accounting major courses.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
ENC 1102 Expository Writing	3
Social Science	3
Physical Science	3
Humanities	4
Physical Education	2
ENC 1418	3
Social Science	3
Physical Science	3
Elective (MAC 1132 if needed, Algebra and Trigonometry)	5
English Elective	3
Social Science	3
Physical Science	3
Humanities	4
Biological Sciences	3

SOPHOMORE YEAR

MAC 3311 Analytic Geometry and Calculus	5
ECO 2013 Basic Economics	5
Humanities	4
Biological Sciences	3
ACC 2001 Elementary Financial Accounting	5
MAC 3312 Analytic Geometry and Calculus	5
ECO 2023 Basic Economics	5
Elective	2
ACC 2103 Financial Accounting I	4
CAP 2010 Intro. to EDP	4
STA 3023 Intro. to Statistics	4
PHI 2100 Logic	4

AGRICULTURE

Students planning to enter the College of Agriculture should take, while in lower division, the following program of study. The sequence in which courses are to be taken will depend upon the department in which a student takes his upper division major and will be determined by counselors in the College of Agriculture.

General Education Requirements

	Credits
English	9
MAC 1132 Algebra and Trigonometry	5
Behavioral Studies	4
American Institutions	9
The Humanities	12
CHM 2040 Introductory General Chemistry	4
PHY 2004C Applied Physics	5
BSC 2010C Organismic Biology	4
PEM 1100 Physical Education	2

Preprofessional Requirements

CHM 2041C and 2042C General Chemistry and Qualitative Analysis	8
AEB 3103 Principles of Food and Resource Economics	5
Electives	17-19

A. Prospective majors in Animal Science, Dairy Science, Food Science, Poultry Science, Pre-Veterinary Medicine, and Microbiology and Cell Science should take courses listed above plus BSC 2011C, 2012C and CHM 2043C.

B. Prospective majors in Dairy and Poultry Management may satisfy the Chemistry requirements by completing CHM 2040 and CHM 2041C.

C. Prospective majors in Agronomy, Fruit Crops, Ornamental Horticulture, Plant Pathology, Soil Science, and Vegetable Crops should take the courses listed above plus BSC 2011C and BOT 2021C.

D. Entomology majors should take BSC 2011C and BSC 2012C in addition to the above to complete biology requirements.

E. Prospective majors in Food and Resource Economics should take the courses listed above but may substitute MAC 3311 or MAC 3312 for PHY 2004C and may fulfill Chemistry requirements by completing CHM 2040 and 2041C or CHM 1020C and CHM 1021.

F. Prospective majors in Agricultural Education, Mechanized Agriculture, Food and Resource Economics may satisfy remaining Biology requirements by completing BSC 2012C and PLS 2031 or ENY 3005.

G. Prospective majors in Microbiology and Cell Science must satisfy Mathematics and Physics requirements by completing MAC 3312, 3313 and PHY 2050, 2051, 2052, with laboratories.

Suitable electives in Agriculture: AEB 3133 or 3300, MAG 3220 and 3312, ANS 3007, ASG 3003, ENY 3005, FOR 2003, FOS 2001 and 2002, PLP 3002, SOS 3022, PLS 2031, ORH 3513C, FRC 3221, 3212 and other according to prerequisites completed.

•Four or more credits of Mathematics or Statistics above College requirements may be substituted.

Suggested Course Sequence

FRESHMAN YEAR

English	3
SSI American Institutions	3
MAC 1132 Algebra and Trigonometry	5
BES Behavioral Studies	3
PEM 1100 Physical Education	2
English	3
SSI American Institutions	3
CHM 2040 General Chemistry	4
BES Behavioral Studies	3
Elective	0-2
English	3
SSI American Institutions	3
CHM 2041C General Chemistry	4
BSC 2010C Organismic Biology	4

SOPHOMORE YEAR

HUM Humanities	4
CHM 2042C Chemistry	4
BSC 2011C Molecules and Cells	4
Elective	2-4
HUM Humanities	4
CHM 2043C Chemistry	4
AEB 3103 Food Resource Economics	5
Electives	2-4
HUM Humanities	4
PHY 2004C Physics	5
Electives of Upper Division Courses	7-8

ARCHITECTURE

Students planning to enter the College of Architecture should take, while in the University College, one of the following programs of study. They should consult the departmental major adviser for specific information regarding grade point averages, minimum grades required in certain courses and other information relating to the Curriculum. Advisers are listed in the catalog under the section titled, "College of Architecture."

To be eligible for admission to the College of Architecture, the student is required to have at least a 2.0 (c) average in the courses listed in the appropriate curriculum for the first two years. In addition the student must earn a 2.0 (c) average in all preprofessional work included in the first two years of the program. Please refer to additional information in the section of this catalog titled "College of Architecture," under the heading "Requirements for Admission".

For upper division programs see the College of Architecture section of the catalog.

A. FOR THE DEGREE, BACHELOR OF DESIGN (ARCHITECTURE)

General Education Requirements

	Credits
English	9
Behavioral Studies	6
American Institutions	9
The Humanities	12
Physical Sciences	4
PHY 2004C, 2005C Applied Physics	10
Biological Sciences	6
PEM 1100 (PL 101) Physical Education	2

Professional Requirements

ARC 1211 Building Arts	3
ARC 1115C Basic Drawing	4
ARC 1126C Architectural Drawing	4
ARC 1131C Architectural Communications	4
ARC 2311C Architectural Design 1	4
ARC 2313C Architectural Design 2	4
ARC 2461 Mat. & Meth. of Constr. 1	4
ARC 2500 Architectural Structures 1	4
MAC 2223 Analytical Geometry and Calculus	5

Suggested Course Sequence

FRESHMAN YEAR

MAC 2223 Analytic Geom/Calc	5
Physical Sciences	4
ARC 1115C Basic Drawing	4
ARC 1211 Building Arts	3
Behavioral Studies	4
PHY 2004C Applied Physics I	5
English	3
ARC 1126C Arch. Drawing	4
PHY 2005C Applied Physics II	5
English	3
ARC 1131C Arch. Communications	4
Humanities	4

SOPHOMORE YEAR

Humanities	4
English	3
Social Sciences	3
ARC 2311C Arch. Design I	4
Biological Sciences	3
Humanities	4
Social Sciences	3
ARC 2313C Arch. Design II	4
Biological Sciences	3
ARC 2500 Arch. Structures I	4
Social Sciences	3
Behavioral Studies	3
ARC 2461 Materials & Methods of Construction I	4

B. FOR THE DEGREE, BACHELOR OF DESIGN (INTERIOR DESIGN)

General Education Requirements

	Credits
English	9
MAC 1132 Algebra and Trigonometry	5
Behavioral Studies	6
American Institutions	9
The Humanities	12
Physical Sciences	10
Biological Sciences	6
PEM 1100 Physical Education	2

Preprofessional Requirements

ARC 1211 Building Arts	3
ARC 1115C Basic Drawing	4
ARC 1126C Architectural Drawing 1	4
ARC 1131C Architectural Communications	4
ARC 2311C Architectural Design 1	4
ARC 2313C Architectural Design 2	4
ACC 2001 Elementary Accounting	5
Electives	9

Suggested Course Sequence

FRESHMAN YEAR

	Credits
ARC 1211 Building Arts	3
Social Sciences	3
Physical Sciences	4
English	3
Physical Education	2

ARC 1115C Basic Drawing 4
Social Sciences 3
Physical Sciences 3
English 3
Behavioral Studies 3

ARC 1126C Architectural Drawing 4
Social Sciences 3
Physical Sciences 3
English 3
Behavioral Studies 3

SOPHOMORE YEAR

HUM Humanities 4
MAC 1132 Algebra and Trigonometry 5
ARC 1131C Architectural Communications 4
ELECT Elective 4

Humanities 4
Biological Sciences 3
ACC 2001 Accounting 5
ARC 2311C Architectural Design 1 5
Humanities 4
Biological Sciences 3
ARC 2313C Architectural Design 4
ELECT Elective 4

C. FOR THE DEGREE, BACHELOR OF LANDSCAPE ARCHITECTURE

General Education Requirements

	Credits
English	9
American Institutions	6
SOC 2000 Principles of Sociology	4
*The Humanities	12
PSC 2501 Physical Sciences: Our Environment	4
**PHY 2004C Applied Physics	5
BSC 2010C Organismic Bio.	4
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
BOT 2710C Pract. Plant Taxon.	3
MAC 2223 Anal. Geometry & Calculus	5
COP 3110 Intro. Comp. Prog.	2
ARC 1211 Building Arts	3
ARC 1115C Basic Drawing	4
ARC 1126C Architectural Drawing 1	4
ARC 1131 C Architectural Communications	4
ARC 2311C Architectural Design 1	4
ARC 2313C Architectural Design 2	4
ARC 2461 Materials and Methods of Construction	4
ARC 2500 Arch. Struct. I	4
LAA 2710 Landscape Architecture 1	4
LAA 2711 Landscape Architecture 2	4

96 hours (minimum) lower division must be completed prior to entry to the professional program.
*Integrative Studies in Architecture may be substituted for one Humanities.
**PHY 2004C may be substituted for PSC 2452 *and* 2401.

Suggested Course Sequence

FRESHMAN YEAR

ARC 1211 Building Arts 3
ARC 1115C Basic Drawing 4
BSC 2010C Organismic Biology 4
MAC 2223 Anal. Geom/Calc. 5
PEM 1100 Physical Education 2

18

ARC 1126C Arch. Drawing 4
BOT 2710C Pract. Plant Taxon. 3
ENG English 3
PSC 2501 Physical Sciences 4

14

ARC 1131C Arch. Communic. 4
ENG English 3
**PSC Physical Sciences 3
SOC 2000 Princ. Sociology. 4
COP 3110 Intro. Computer Pr. 2

16

SOPHOMORE YEAR

LAE 2710 Land. Arch. 1 4
ARC 2311C Arch. Design 1 4
*HUM Humanities 4
ENG English 3
**PSC Physical Sciences 3

18

LAA 2711 Land. Arch. 2 4
ARC 2313C Arch. Design 2 4
*HUM Humanities 4
SSI Social Sciences 3

15

ARC 2461 Mat/Meth. Const. 1 4
ARC 2500 Arch. Structures 1 4
*Humanities 4
SSI Social Sciences 3

15

D. FOR THE DEGREE IN BUILDING CONSTRUCTION

General Education Requirements

	Credits
English	9
MAC 1132 Algebra and Trigonometry	5
American Institutions	6
The Humanities	12
PHY 2004C, 2005C Applied Physics	10
Biological Sciences	6
PEM 1100 (PL 101) Physical Education	2
ECO 2013 Basic Econ. 1	5

Preprofessional Requirements

BCN 1210 Construction Materials 4
MAC 2223 Analytical Geometry and Calculus 5
GLY 2026 Engineering Geology 4
ARC 1126C Architectural Drawing 4
Cybernetics and Society 4
ACC 2001 Elementary Financial Accounting 5
ENC 3351 Business Communications 4
BCN 2400 Construction Mechanics 1 5
Electives 3

ARTS AND SCIENCES

The College of Arts and Sciences offers degrees with majors in twenty-nine different major fields, which are listed in the Arts and Sciences section of the catalog, plus an interdisciplinary major. Students who expect to enter the College of Arts and Sciences should complete the General Education Courses listed below and elective courses, with a C or better average. In general, students with a grade of D in any of these courses must complete an Arts and Sciences course in the same area with a grade of C or better before graduation.

Students must complete the General Education Requirements listed below and must apply for and receive the Associate of Arts prior to graduation. Note that the Basic Distribution Requirement listed in the Arts and Sciences

section of the catalog must also be met prior to graduation. Many courses will serve in satisfying both requirements. Some will not. Further, the number of credits required in each differs somewhat but BOTH requirements must be met.

A laboratory course is required in the Physical or Biological Sciences before graduation and may be fulfilled by taking APB 2150L or any course in an Arts and Sciences science department that has a regularly scheduled laboratory.

General Education Requirements

	Credits
English	9
Mathematics	4

(Botany, chemistry, computer science, economics, mathematics, microbiology, premedical, predental, physics, statistics, and zoology majors should substitute a MS course for MGF 1113.

Behavioral Studies	3
American Institutions	9
The Humanities	12
Physical Sciences	10

(Botany, chemistry, microbiology, physics, premedical, predental, and zoology majors should substitute courses in chemistry for PSC.)

Students majoring in COC may substitute a physics or chemistry sequence for PSC.

Biological Sciences	9

(Botany, microbiology, premedical, predental, and zoology majors should substitute courses in zoology and botany for BSC. All students must earn at least a grade of C in one course in an Arts and Science biological science department: BSC, BOT, MCB, ZOO.)

PEM 1100 Physical Education	12

Preprofessional Requirements

A great amount of flexibility is available to the liberal arts student. Certain general guidelines are:

1. Study the materials on admission, advisement, and requirements for degrees in the Arts and Sciences section of the catalog, and consult with the proposed major department as soon as you have chosen a major field.

2. Take courses in your major and take electives.

3. Begin a foreign language. *Prior to graduation* a student must show proficiency in a foreign language either by examination or by successful completion of the third course of the three course beginning sequence or a higher level course.

4. Complete one course in science having a laboratory, *prior to graduation* (not necessarily prior to admission to the upper division). A student may satisfy this requirement while he is in the lower division by taking APB 2150L, or by successfully completing an Arts and Sciences course in science which has a laboratory. A grade of at least C is required.

Teacher Preparation in Arts and Sciences

Students may earn their degrees in the College of Arts and Sciences and complete requirements for certification as high school teachers in one or more academic subjects by following one of the Arts and Sciences — Education Programs described in the College of Education section in this catalog.

Further information may be obtained in the College of Arts and Sciences office, 2008D GPA.

Computer and Information Sciences

A student may major in Computer and Information Sciences through the College of Arts and Sciences and is expected, with the aid of his adviser, to satisfy the general Arts and Sciences requirements. In addition during the Freshman year the student should decide which of two Sophomore COC sequences to take. Prior to the start of the Junior year the student should decide which of three general areas he or she wishes, each of which carries different course requirements.

Years 1, 2, Core Requirements for all COC majors:

	Hours
MAC 3311, 3312, 3313	15
*CDA 3101	8
MAS 3114	4
STA 4033	5
CDP 3530, 3550	8

BUSINESS ADMINISTRATION

The College of Business Administration offers degrees in seven major fields which are listed in the Business Administration section of the catalog. Students who expect to receive a degree in one of the business majors must complete: (1) the General Education courses and the Preprofessional requirements listed below and elective courses for a total of at least 96 hours; and (2) satisfactorily complete the upper division requirements.

Students who plan to major in Accounting please see the section headed School of Accounting.

General Education Requirements

(For all majors in Business Administration)

	Credits
English	9
*MAC 3311 Analytic Geometry and Calculus 1	5
*PHI 2100 Logic	4
American Institutions	9
The Humanities	12
**Physical Sciences	7-10
**Biological Sciences	6-9
PEM 1100 Physical Education	2

Preprofessional Requirements

a. For Finance, Economics, Insurance, Management, Marketing and Real Estate and Urban Analysis majors:

	Credits
ACC 2001 Elementary Financial Accounting	5
ACC 2301 Elementary Managerial Accounting	3
ECO 2013, 2023 Basic Economics	10
MAC 3312 Analytic Geometry and Calculus II	5
STA 3023 Introduction to Statistics	4
ECO 3411 Economic and Business Statistics	4
Electives to make a total of 96 hours	

b. For Computer Information Sciences majors:

	Credits
ACC 2001, 2301 Elementary Accounting	8
ECO 2013, 2023 Basic Economics	10
Introduction to Computing	4
COP 3530 Data Structures	4
MAC 3312 Analytical Geometry and Calculus	5
Matrices and Vector Spaces	4
STA 4033 Mathematical Statistics with Computer Applications	5
Electives to make a total of 96 hours	

*MAC 3311 and PHI 2100 are also considered preprofessional courses.

**Students are expected to complete 16 hours of the Sciences. Choose elective courses needed to complete the total 96 quarter hours in the university transfer program from such areas as mathematics, natural sciences, social science, foreign language, and humanities.

Suggested Course Sequence

FRESHMAN YEAR

English	3
Social Science	3
Physical Science	3
MAC 3311 (or MS 102 if needed)	5
PEM 1100 Physical Education	2
English	3
Social Science	3

Physical Science	3
MAC 3312	5
English	3
Social Science	3
Physical Science	3
STA 3023	4

SOPHOMORE YEAR

Humanities	4
ECO 2013	5
ECO 3411	4
Biological Science	3
Humanities	4
ECO 2023	5
ACC 2001	5
Biological Science	3
Humanities	4
PHI 2100	4
ACC 2301, 2401	3
COP 3110	2
Elective	5

EDUCATION

ELEMENTARY OR EARLY CHILDHOOD EDUCATION

General Education Requirements

	Credits
American Institutions	9
Physical Sciences	10
English	9
Behavioral Studies	6
MAE 3810, 3811 Mathematics	6
The Humanities	12
Biological Sciences	9
PEM 1100 Physical Education	2

One quarter of Biological Science or of Physical Science may either be omitted or taken as an elective. Students may not use AGG 2501, ANT 3511, ECH 3783, FOR 2010, FOS 2001, HUN 2201, SOS 3215 to meet the biological science requirement. Acceptable courses to meet the English requirement are limited to ENC 1102, ENC 1418, ENG 1200, ENG 1400, ENG 1710, ENC 1256, CRW 2321, CRW 2221, LIT 2160, LIT 2930, ENG 2120, ENG 2932, ENC 3464, ENC 3343, ENC 3351, ENG 3500, ENG 3551, CRW 3330, CRW 3230, ENC 3532, ENG 4511, ENC 4356.

Preprofessional Requirements

1. At least 96 credits are required for admission to upper division. The College of Education will accept those students who present the best records and show the most promise of success in a teacher education program. See the College of Education section of the catalog for further information relating to admission to upper division.

2. The following courses may be taken in the Sophomore year or delayed until the Junior year:

   a. MUE 2402 (Students must have a 2.0 average and have completed 64 hours)
   b. ENG 4161

3. Speech requirements may be completed in the Sophomore year or delayed until the Junior year. This requirement is met by successful completion of SPC 2300 or 3601 or by successfully passing the speech screening test administered by the Speech Department.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
American Institutions	9
•Physical Sciences	7-10
••English	9
Behavioral Studies	6
PEM 1100 Physical Education	2
Electives	12
	46-49

SOPHOMORE YEAR

	Credits
The Humanities	12
•Biological Sciences	6-9
MAE 3810, 3811	6
Electives	22
	46-49

•One quarter of Biological Sciences or Physical Sciences may either be omitted or taken as an elective.

••See statement under General Education Requirements for acceptable English courses.

SECONDARY EDUCATION OR K-12 PROGRAMS

Secondary Education students wishing certification for teaching in grades 7-12 may work toward degrees in either the College of Education or the College of Arts and Sciences.

Certain other programs prepare students for careers at all levels of teaching from kindergarten through grade 12 (K-12). These special programs are:

Art (through either the College of Education or the College of Architecture and Fine Arts)

Music (through either the College of Education or the College of Fine Arts)

Physical Education (through either the College of Education or the College of Physical Education)

Special Education — Mental Retardation (through the College of Education)

Speech Pathology and Audiology (through either the College of Education or the College of Arts and Sciences)

All secondary and K-12 programs are specified in the College of Education section of the catalog.

All University College students working toward degrees in Secondary Education or K-12 programs with the exception of science education and music education will pursue the following program:

General Education Requirements

	Credits
American Institutions	9
Physical Sciences	10
English	9
Behavioral Studies	6
Fundamental Mathematics	4
The Humanities	12
Biological Sciences	9
PEM 1100 Physical Education	2

One quarter of Biological Science or of Physical Science may either be omitted or taken as an elective. Students may not use AGG 2501, ANT 3511, ECH 3783, FOR 2010, FOS 2001, HUN 2201, SOS 3215 to meet the biological science requirement. Acceptable courses to meet the English requirement are limited to ENC 1102, ENC 1418, ENG 1200, ENG 1400, ENG 1710, ENC 1256, CRW 2321, CRW 2221, LIT 2160, LIT 2930, ENG 2120, ENG 2932, ENC 3464, ENC 3343, ENC 3351, ENG 3500, ENG 3551, CRW 3330, CRW 3230, ENC 3532, ENG 4511, ENC 4356.

Science education majors should take CHM instead of PSC and ZOO and BOT instead of APB. They should also take MAC courses instead of MGF.

Because of the nature of their program, music education majors will take their general education requirements over a four year period rather than only during the first two years.

Preprofessional Requirements

A. Teaching field requirements

These teaching fields are listed in the College of Education section of the Catalog together with course requirements for each field. Some of these courses can and should be taken while in the University College.

B. Other requirements

1. At least 96 credits are required for admission to upper division. The College of Education will accept those students who present the best records and show the most promise of success in a teacher education program. See the College of Education section of the

catalog for further information relating to admission to upper division.

C. Other considerations

1. Speech requirement may be completed in the Sophomore year or delayed until the Junior year. This requirement is met by successful completion of SPC 2300 or 3601 or by successfully passing the speech screening test administered by the Speech Department. English and Language Arts majors may meet this requirement *only* by successful completion of SPC 2300 or 3601.

2. Psychological Foundations Course. (Students must have completed 80 credits)

a. EDF 3135 for Secondary Education

b. EDF 3110 for Special Teaching Fields

3. Students who choose to work toward a teacher education degree in a college other than the College of Education should consult that college's portion of the catalog for admission and graduation requirements.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
American Institutions	9
•Physical Sciences	7-10
••English	9
Behavioral Studies	6
PEM 1100 Physical Education	2
Electives	12
	46-49

SOPHOMORE YEAR

	Credits
The Humanities	12
•Biological Sciences	6-9
Mathematics	4
Electives	24
	46-49

•One quarter of Biological Sciences or Physical Sciences may either be omitted or taken as an elective.

••See statement under General Education Requirements for acceptable English courses.

ENGINEERING

Essential Preparation: Modern engineering education demands much in the way of specific high school preparation not required in other college programs. The beginning engineering student should have a good understanding of the basic physical sciences, a highly developed ability in mathematics, and the competence to read rapidly and with comprehension. The College of Engineering considers that a minimum adequate preparation would be substantially as follows:

The high school program should include the following subjects:

Essentials	Year
Elementary algebra	1
Intermediate and advanced algebra	1
Plane geometry	1
Trigonometry	½
Chemistry	1
Physics	1
Desirable	
Additional Mathematics	½

Deficiences in the above subjects may be overcome by registering in certain foundation courses before proceeding with parts of the regular engineering program.

A student in University College may request transfer to the College of Engineering at any time after completing 45 credits.

FRESHMAN AND SOPHOMORE REQUIREMENTS

The following program is designed for those students whose high school preparation meets the above criteria. All Freshmen are required to consult with a College of Engineering adviser in planning their academic programs.

High school records and test scores are reviewed and a program of study commensurate with the student's academic capabilities is assigned. This workload may range from a minimum of 12 to as much as 20 credit hours per quarter. A student of above average academic capabilities and a high order of motivation should be able to carry 15-16 credits each quarter and should thus be able to earn a bachelor's degree in 13 quarters. If he or she pursues this academic program for three quarters each year it will take him or her four years and one quarter to the fifth to earn his or her B.S. degree.

General Education Requirements

	Credits
English	9
American Institutions	9
•The Humanities	12
••MAC 3311, 3312 Analytic Geometry and Calculus	10
PHY 2040, 2041, 2042 General Physics with Calculus	9
PHY 2040L, 2041L, 2042L Physics Laboratory	3
PEM 1100 Physical Fitness	2

Preprofessional Requirements

	Credits
•••CHM 2045C, 2046C General Chemistry and Qualitative Analysis	8
•••CHM 2047C or Biological Science Elective	4
MAC 3313, 3314 Analytic Geometry and Calculus	10
EGM 3311 Introduction to Engineering Analysis or MS-305 MAP 3302 Elementary Differential Equations	3
••••EIN 3114 Computer Programming for Engineers	3
ENG 1002 Introduction to Engineering, Electives and Departmental Requirements	14

Suggested Course Sequence

FRESHMAN YEAR

	Credits
English	9
American Institutions	9
••MAC 3311, 3312, 3313	15
•••Chemistry	12
ENG 1002	1
PEM 1100	2

SOPHOMORE YEAR

	Credits
•Humanities	12
MAC 3314	5
PHY 2040, 2041, 2042	9
PHY 2040L, 2041L, 2042L	3
Other Courses (see engineering adviser)	

•Humanities may be delayed till Junior year.

••Students who are weak in algebra or trigonometry should take MAC 1132 before attempting MAC 3311.

•••Only well-prepared students qualify for admission to the CHM 2045C sequence. Other students take the CHM 2040 sequence. See the chemistry course descriptions in the back of the catalog for minimum criteria for admission to CY courses. Students weak in mathematics may need MAC 1132 prior to CHM 2040. Students of chemical and environmental engineering are required to take CHM 2047C.

••••Students entering Chemical Engineering take ECH 3841. EIN 3114 is not required in the CIS program.

Detailed information about departmental requirements is found in the section on Engineering in this catalog.

A pre-engineering program, taken in one of the Florida Community/Junior Colleges, consists of courses of two semesters, or equivalent, in the following areas: English, social studies, general chemistry and qualitative analysis, and physics (taught with the use of calculus); mathematics at least through integral calculus; and other required or elective courses. Eight semester (12 quarter) credits of Humanities are required. This program totals at least 64 semester hours (96

quarter hours). Satisfactory completion of this program leads to eligibility to apply for admission to the College of Engineering. Community/Junior college counselors are referred to the University of Florida Junior College Counseling Manual sections on General Information and Engineering for additional information.

FINE ARTS

Students planning to enter the College of Fine Arts should take, while in the University College, one of the following programs of study. They should consult the departmental major adviser for specific information regarding grade point averages, minimum grades required in certain courses and other information relating to the curriculum. Advisers are listed in the catalog under the section titled "College of Fine Arts."

To be eligible for admission to the College of Fine Arts, the student is required to have at least a 2.0 (C) average in the courses listed in the appropriate curriculum for the first two years. In addition the student must earn a 2.0 (C) average in all preprofessional work included in the first two years of the program. Please refer to additional information in the section of this catalog titled "College of Fine Arts," under the heading "Requirements for Admission". Music majors may apply to the College of Fine Arts after one quarter in University College.

For upper division programs, see the College of Fine Arts section of the catalog.

A. FOR THE DEGREES IN ART [GRAPHIC DESIGN, ART EDUCATION, CRAFTS, FINE ARTS, HISTORY OF ART]

General Education Requirements

	Credits
English	9
Fundamental Mathematics	4
Behavioral Studies	6
American Institutions	9
The Humanities	12
Physical Sciences	7
Biological Sciences	9
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
ART 1201C, 1203C Beginning Design 1 and 2	6
ART 1300C, 1301C Beginning Drawing 1 and 2	6
ART 2205C Intermediate Design	3
ART 2302C Int. Drawing and Painting	3
ARH 2050, 2051, 2052 Intro. to History of ART 1, 2, and 3	9
Electives	11

NOTE: Students intending to major in art education are urged to become familiar with the requirements as listed under the College of Education dealing with admission to the advanced Professional Sequence.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
Comp. English	3
Am. Institutions	3
Behavioral Studies	3
ART 1201C Beginning Design 1	3
ART 1300C Beginning Drawing 1	3
PEM 1100 Physical Education	2
Comp. English	3
Am. Institutions	3
Behavioral Studies	3
ART 1203C Beginning Design 2	3
ART 1301C Beginning Drawing 2	3
Comp. English	3
Am. Institutions	3
Fund. Mathematics	4
Elective	5

SOPHOMORE YEAR

	Credits
Humanities	4
Biological Science	3
Physical Science	4
ART 2205C Intermediate Design	3
ARH 2050 Introd. to History of Art 1	3
Humanities	4
Biological Science	3
Physical Science	3
ART 2302C Inter. Drawing & Pnt.	3
ARH 2051 Introd. History of Art 2	3
Humanities	4
Biological Science	3
ARH 2052 Introd. History of Art 3	3
General or Art Electives	6

B. FOR ALL MUSIC MAJORS PROGRAMS IN THE COLLEGE OF FINE ARTS: BACHELOR OF MUSIC AND BACHELOR OF MUSIC EDUCATION DEGREES.

NOTE: Music majors must be admitted to the music major program by the Department of Music. Prospective majors should see the Department of Music Chairman as early as possible in their college careers.

General Education Requirements

	Credits
Social Science	9
English	9
Behavioral Studies	6
The Humanities	12

Bachelor of Music:

Of the 8 courses: MGF 1113, PSC 2501, PSC 2701, PSC 2121, APB 2150, APB 2151, APB 2153, PHY 2063, the student must elect 3 courses, normally in the Junior Year. The student may elect these courses in the Sohomore year, and take HUM 2210, HUM 2230, HUM 2250 in the Junior year.

Bachelor of Music Education:

Of the 7 courses: PSC 2501, PSC 2701, APB 2150, APB 2151, APB 2153, PHS 4850, the student must earn a minimum of 15 credits which include credits in both CPS and CBS. A minimum of one course in Mathematics is required, and may be taken in either the Junior or Senior year. MUL 2011 does not satisfy Humanities requirements.

PEM 1100 Physical Education	2

Preprofessional Requirements

FRESHMAN YEAR

Music Performance Area	Credits
Applied Music: Principal Instrument or Voice	9
Ensemble: Band, Chorus, or Orchestra	3
MVK 2111, 2111 Piano Skills	2
MUE 2431 Voice Skills 1	2
Music Theory Sequence	
MUT 1111, 1112, 1113, 1241, 1242, 1243	12

SOPHOMORE YEAR

Music Performance Area	Credits
Applied Music: Principal Instrument or Voice	9
Ensemble: Band, Chorus, or Orchestra	3
MVK 2111, 2121, 2121 Piano Skills	3
Music Theory Sequence	
MUT 2116, 2117, 2118, 2246, 2247, 2248	12
Electives	2

NOTE: The Bachelor of Arts degree in music is offered through the College of Arts and Sciences with the cooperation of the Department of Music. See the College of Arts and Sciences sections of the catalog for that degree.

Suggested Course Sequence

FRESHMAN YEAR

Fall Quarter (1)	Credits
MUT 1111 Theory of Music (1)	3
MUT 1241 Theory of Music Lab (1)	1

MUE 2431 Voice Skills 2
(Voice majors and voice principals take MUS 4201 Language and Diction for singers.)
Applied Music Principal 3
Band, Orchestra or Chorus 1
English 3
American Institutions 3
PEM 1100 Physical Education 2

Winter Quarter (2)	Credits
MUT 1112 Theory of Music (2)	3
MUT 1242 Theory of Music Lab (2)	1
MVK 2111 Piano Skills (1)	1
Applied Music Principal	3
Band, Orchestra or Chorus	1
English	3
American Institutions	3

Spring Quarter (3)	Credits
MUT 1113 Theory of Music (3)	3
MUT 1243 Theory of Music Lab (3)	1
MVK 2112 Piano Skills (2)	1
Applied Music Principal	3
Band, Orchestra or Chorus	1
English	3
American Institutions	3

SOPHOMORE YEAR

Fall Quarter (4)	Credits
MUT 2116 Theory of Music (4)	3
MUT 2246 Theory of Music Lab (4)	1
MVK 2113 Piano Skills (3)	1
Applied Music Principal	3
Band, Orchestra or Chorus	1
Humanities	4
Behavioral Studies	3

Winter Quarter (5)	Credits
MUT 2117 Theory of Music (5)	3
MUT 2247 Theory of Music Lab (5)	1
MVK 2121 Piano Skills (4)	1
Applied Music Principal	3
Band, Orchestra or Chorus	1
Humanities	4
Behavioral Studies	3

Spring Quarter (6)	Credits
MUT 2118 Theory of Music (6)	3
MUT 2248 Theory of Music Lab (6)	1
MVK 2122 Piano Skills (5)	1
Applied Music Principal	3
Band, Orchestra or Chorus	1
Humanities	4
Elective	2

Acceptable courses are: ENC 1102, ENC 1418, ENG 1200, ENG 1400, ENG 1710, ENC 1256, CRW 2321, CRW 2221, LIT 2160, LIT 2930, ENG 2120, ENG 2932, ENC 3464, ENC 3343, ENC 3351, ENG 3500, ENG 3551, CRW 3330, CRW 3230, ENC 3532, ENG 4511, ENC 4356.

C. FOR THE DEGREE IN THEATRE

General Education Requirements

	Credits
English	9
Fundamental Mathematics	4
Behavioral Studies	6
American Institutions	9
The Humanities	12
Physical Sciences	7
Biological Sciences	9
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
THE 2000 Theatre Appreciation	4
ORI 2001 Oral Interpretation 1	4
TFP 2700 Voice and Articulation	4
TPP 3510 Stage Movement 1	4
TPF 3110 Acting 1	4
TPA 3250 Stage Makeup	3
Electives	14

Suggested Course Sequence

FRESHMAN YEAR

	Credits
American Institutions (Social Sciences)	3
Comprehensive English	3
Physical Science	4
THE 2000 Theatre Appreciation	4
Physical Education (Dance, Movement, Fencing Gymnastics)	1
American Institutions (Social Sciences)	3
Physical Science	3
Comprehensive English	3
ORI 2001 Oral Performance I	4
Physical Education (Dance, Movement, Fencing, Gymnastics)	1
Elective	4
American Institutions (Social Sciences)	3
Comprehensive English	3
TPP 2700 Voice and Articulation	4
MGF 1113 Mathematics	4
Physical Education (Dance, Movement, Fencing, Gymnastics)	1

SOPHOMORE YEAR

	Credits
Humanities	4
Biological Sciences	3
TPP 3510 Stage Movement I	4
TPP 3110 Acting I	4
Behavioral Studies	3
Humanities	4
Biological Sciences	3
TPA 3250 Stage Makeup	3
Elective	4
Behavioral Studies	3
Humanities	4
Biological Sciences	3
Elective	6

NOTE; A student may choose to omit one quarter from the three quarter sequence of either Physical Sciences or Biological Sciences.

FOREST RESOURCES AND CONSERVATION

Students desiring to prepare for professional careers in the many areas of resources management and conservation (including majors in Forestry, Range Ecosystem Management and Wildlife Ecology) should select the appropriate program from those listed below. In addition, they should contact the Director of the School of Forest Resources and Conservation at the earliest possible date for assignment to an adviser.

Students with adequate preparation in fundamental subjects may upon approval of their adviser bypass certain listed basic courses and proceed with more advanced work in the fields concerned. To be eligible for direct admission applicants must have completed courses as shown below, a total of at least 96 quarter hours and have a grade point average (GPA) of 2.3 or above.

PREPROFESSIONAL PROGRAM IN FOREST RESOURCES MANAGEMENT AND CONSERVATION

General Education Requirements

	Credits
English	9
*MAC 3311-3312 Analytic Geometry and Calculus 1, 2	10
Social Sciences	9
Humanities	12
CHM 2040, 2041C, 2045C, 2046C General Chemistry	8
Biological Science Elect either:	
(a) BSC 2010C, 2011C, BOT 2021C (Forestry)	
or	
(b) BSC 2010C, 2011C, BOT 2710C (Range)	
or	

(c) BSC 2010C, 2011C, 2012C (Wildlife)	13-15
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
**CHM 2042C, 2043C, 2047C Qualitative Analysis	4-8
***ECO 2013, 2023 Basic Economics	10
Either PHY 2004C, 2005C or PHY 2050, 2050L, 2051, 2051L Physics	10
STA 3023 Introduction to Statistics 1	4
Electives	5
Total	96-102

*Students with inadequate backgrounds in mathematics will have to complete MAC 1132 — Algebra and Trigonometry (5 credits) or equivalent.

**BCH 3023 Elementary Organic & Biological Chemistry may be substituted for CHM 2042C, 2043C, 2047C. Students should note this is a terminal chemistry course.

***AEB 3103 Principles of Food and Resource Econ. (5 credits) may be substituted for ECO 2023.

HEALTH RELATED PROFESSIONS

University College students planning to apply for Upper Division status in the College of Health Related Professions are urged to study the section of the catalog dealing with the College and its programs in Clinical and Community Dietetics, Medical Technology, Occupational Therapy, and Physical Therapy. Special attention should be given those paragraphs on admission policies.

Limitations in available staff, faculty and facilities make it necessary that the College reluctantly establish quotas for the admission of students.

Each department has its own application procedures. Preprofessional students should contact the department of their major objective as early as possible (Clinical and Community Dietetics, Room N1-8 in the Medical Sciences Building, Medical Technology, Room 4111 in Jennings Annex; Occupational Therapy, Room DG-83 in Shands Teaching Hospital; and Physical Therapy, Room A-92 in the Medical Science Building). The sequence of professional courses in all programs begins only in the Fall quarter of the Junior year. The deadline for receipt of completed applications for September enrollment is the preceding March 15.

Students who plan to earn a baccalaureate degree in the College of Health Related Programs elect one of the following programs:

A. FOR THE DEGREE IN CLINICAL AND COMMUNITY DIETETICS

General Education Requirements

	Credits
English	9
MGF 1113 Fundamental Mathematics	4
Behavioral Studies	6
Social Sciences	9
Humanities	12
CHM 2040 General Chemistry	4
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
BSC 2010, 2011, 2012 Biological Sciences Integrated Sequence	15
CHM 2041, 2042, 2043 General Chemistry	12
HUN 2201 Fundamentals of Nutrition	4
PSY 2013 General Psychology	4
HSC 1001 Introduction to Health Related Professions	3
Electives	12

Suggested Course Sequence

FRESHMAN YEAR

	Credits
Social Sciences	3
English	3
CHM 2040 General Chemistry	4
BSC 2010 Biological Sciences	5
PEM 1100 Physical Education	2
Social Sciences	3
English	3
BSC 2011 Biological Sciences	5
CHM 2041 General Chemistry	4
Social Sciences	3
English	3
BSC 2012 Biological Sciences	5
CHM 2042 General Chemistry	4

SOPHOMORE YEAR

	Credits
Humanities	4
CHM 2043 General Chemistry	4
HSC 1001 Introduction to Health Related Professions	3
Electives	5
Humanities	4
MGF 1113 Fundamental Mathematics	4
HUN 2201 Fundamentals of Nutrition	4
Behavioral Studies	3
Humanities	4
PSY 2013 General Psychology	4
Behavioral Studies	3
Electives	6

B. FOR THE DEGREE IN MEDICAL TECHNOLOGY

General Education Requirements

	Credits
English	9
MAC 1132 Algebra and Trigonometry	5
Behavioral Studies	3
American Institutions	9
The Humanities	12
CHM 2045C General Chemistry	4
STA 3023 Introduction to Statistics	4
BSC 2010C, 2011C, 2012C Biological Sciences — Integrated Sequence	12
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
CHM 2046C General Chemistry	4
CHM 2047C General Chemistry	4
CHM 3200, 3200L Organic Chemistry	6
CHM 3120 Quantitative Analysis	5
HSC 1001 Introduction to Health Related Professions	3
MLS 2030 Introduction to Medical Technology	2
Electives	12

Suggested Course Sequence

FRESHMAN YEAR

Fall Quarter	Credits
American Institutions	3
English	3
CHM 2045C, 2040 General Chemistry	4
HSC 1001 Introduction to the Health Related Professions	3
PEM 1100 Physical Education	2
Winter Quarter	Credits
American Institutions	3
English	3
CHM 2046C, 2041C General Chemistry	4
MLS 2030 Introduction to Medical Technology	2
Elective	4
Spring Quarter	Credits
American Institutions	3
English	3
CHM 2047C, 2042C General Chemistry and Qualitative Analysis	4
Behavioral Studies	3 or 4
Elective	4 or 3
Summer Quarter	Credits
*CHM 2043C General Chemistry and Qualitative Analysis	4

*Students taking CHM 2040, 2041C, 2042C, 2043C series must take CHM 2043C in summer to be ready for CHM 3200, 3200L fall quarter.

SOPHOMORE YEAR

Fall Quarter	Credits
CHM 3200 Organic Chemistry	4
CHM 3200L Organic Chemistry Laboratory	2
**MAC 1132 Algebra and Trigonometry	5
BSC 2010C Biological Sciences — Integrated Sequence	4
Winter Quarter	Credits
CHM 3120C Quantitative Analysis	5
The Humanities	8
BSC 2011C Biological Sciences — Integrated Sequence	4
Spring Quarter	Credits
The Humanities	4
STA 3023 Introduction to Statistics	4
BSC 2012C Biological Sciences — Intregrated Sequence	4
Elective	4

**Students who qualify should take an advanced mathematics course instead of MAC 1132. Consult University counselor.

C. FOR THE DEGREE IN OCCUPATIONAL THERAPY

General Education Requirements

	Credits
English	9
Fundamental Mathematics	4
Behavioral Studies	6
American Institutions	9
The Humanities	12
Physical Sciences	7
APB 2150, 2151, 2153, Biological Sciences	10
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
HSC 1001 Introduction to Health Related Professions	3
PSY 2013 General Psychology	4
PPE 3004 Psychology of Personality	4
OTH 2000 Introduction to Occupational Therapy	2
Electives	23

Suggested Course Sequence

FRESHMAN YEAR

Fall Quarter	Credits
SSI 2110 American Institutions	3
Men and Concepts	4
ENC 1102 Expository and Argumentative Writing	3
Creative and Critical Thinking	3
MGF 1113 Fundamental Mathematics	4
Winter Quarter	Credits
SSI 2110, 2122, 2121 Economic and Political Institutions	3
Fundamentals of Physical Science	4
ENG 1200 Introduction to Fiction	3
Decisionmaking	3
HSC 1001 Introduction to Health Related Professions	3
Spring Quarter	Credits
SSI 2221 American Institutions	3
ENG 1400, 1710 Drama or Poetry	3
PEM 1100 Physical Education	2
Electives	7

Summer Quarter (Optional—to complete prerequisites before application deadline)

	Credits
HUM 2210 Western Humanities (or Music or Art)	4
ZOO 2010C Introductory Zoology Laboratory	4

SOPHOMORE YEAR

Fall Quarter	Credits
HUM 2210, 2230 Western Humanities	4
APB 2150 The Biological Sciences	3
PSY 2013 General Psychology	4
Electives	5
Winter Quarter	Credits
HUM 2230, 2250 Western Humanities	4
APB 2151 The Biological Sciences	3
OTH 2000 Introduction to Occupational Therapy	2
PPE 3004 Psychology of Personality	4
Electives	3
Spring Quarter	Credits
(Selected from Music or Art)	4
APB 2153 The Biological Sciences	3
APB 2150L Laboratory in Biological Sciences	1
Electives	8

Summer Quarter

Students accepted for the Occupational Therapy program may elect available courses in the Department of Occupational Therapy.

D. FOR THE DEGREE IN PHYSICAL THERAPY

General Education Requirements

	Credit
English	9
*MAC 1132, Algebra and Trigonometry (or more advanced math)	5
Behavior Studies	6
Social Studies	9
Humanities	12
*CHM 2040C, Introductory General Chemistry	4
*PHY 2004C, 2005C Applied Physics	10
*BSC 2010C, Molecules and cells	5
*BSC 2011C, Organisms	5
PEM 1100 Physical Education	2
Electives	2

Preprofessional Requirements

	Credits
CHM 2041C, 2042C General Chemistry	8
PSY 2013 General Psychology	4
HSC 1001 Introduction to Health Related Professions	3
ZOO 3703C, Functional Vertebrate Anatomy	5
PPE 3004, Psychology of Personality	4

*These are also preprofessional requirements.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
English	3
Social Science	3
CHM 2040C	4
HSC 1001 (or MAC 1132 or PSY 2013)	3
PEM 1100 Physical Education	2
English	3
Social Science	3
CHM 2041C	4
MAC 1132 (or see above)	5
English	3
Social Science	3
CHM 2042C	4
PSY 2013 (or see above)	4

SOPHOMORE YEAR

	Credits
Humanities	4
BSC 2010C	5
PHY 2004C	5
Behavioral Sciences	3
Humanities	4
BSC 2010C or ZOO 3703C	5
PHY 2005C	5
Behavioral Studies	3
Humanities	4
BSC 2010C or ZOO 3703C	5
PPE 3004	4
Elective (or CLP 4144 Abnormal Psychology)	2

JOURNALISM AND COMMUNICATIONS

Listed below are general requirements for all students seeking a degree from the College of Journalism and Communications. It is expected that students will complete, in their first two years at the university, nearly all of the

General Education Requirements and a considerable part of the Basic Distribution and Pre-Professional Requirements. The remainder will be completed as early as possible upon admission to the College of Journalism and Communications. A suggested course sequence is provided for the first two years. This can be altered to fit the student's circumstance but students are urged not to delay their foreign language or quantitative option.

General Education Requirements

	Minimum Credits
*English ENC 1102 — Expository Writing ENC 1418 — Argumentative and Persuasive Writing One 1000 or 2000 level English course	9
Mathematics MGF 1113 — Fundamental Mathematics (for students taking foreign language option) or MAC 1132 — Algebra and Trigonometry or (if qualified) MGF 2202 — Basic Mathematics for the Social Sciences (for students taking the quantitative option)	4
Social Sciences SSI 2110 — Culture and the Socializing Institutions SSI 2122 — The Economic and Political Institutions of Urban America SSI 2221 — America's Role in World Affairs	9
Behavioral Studies **BES 2351 — Power and Violence	4
Humanities (See list of Humanities options)	12
***Physical Sciences PSC 2501 — Our Environment ISC 2452 — Man's Interactions with the Physical Environment PSC 2121 — Natural Regions of the United States	6-9
***Biological Sciences (See list of Biological Sciences Options)	6-9
Total	53

**Students may substitute ANT 2410, SOC 2000 or PSY 2013.
***Three quarter hours in either of these areas may be omitted.

Basic Distribution Requirements

**English	4
Social Sciences	
ECO 2000, 2013, 2023 or ECP 3303	4 or 5
AMH 2010, 2020	10
POS 2041, 2112	8
Additional Social Science Electives	15
Total	41 or 42

**Only grades of C or higher are acceptable

Preprofessional Requirements

These courses should be taken as soon as possible, preferably before admission to the College of Journalism and Communications. They are required for graduation.

1. MMC 2100. Writing for Mass Communications. Grade of C or higher must be earned; prerequisite for course is a typing proficiency of at least 20 words per minute; student may be exempted from and earn credit for course by passing a proficiency exam in writing at UF 3

2. SPC 3601, Public Speaking
Grade of C or higher must be earned; speaking performance courses that may be substituted. SPC 2260, SPC 3420 SPC 3513
ORI 2001, ORI 2002, TPP 2700 4

3. One Foreign Language 15
or
Quantitative Option
Take any combination of the following courses; ACC 2001, 2301, 2401
STA 3013, 3023, STA 3024, 4222
COP 3110, 3111, 3120 10

4. Professional courses — see appropriate sequence

Total Hours Required for Graduation 192

FRESHMAN YEAR

First Quarter

	Credits
ENC 1102 Expository Writing	3
SSI 2110 American Institutions: Culture and the Socializing Institutions	3
PSC 2501 Our Environment	4
Mathematics	4
PEM 1100 Physical Education	2
Total	16

Second Quarter

ENC 1418 Argumentative and Persuasive Writing	3
SSI 2122 American Institutions: The Economic and Political Institutions of Urban America	3
ISC 2452 Man's Interactions with the Environment	3
**BES 2351 Power and Violence	4
Elective	4
Total	17

Third Quarter

EH (1000 or 2000 level)	3
SSI 2221 American Institutions: America's Role in World Affairs	3
PSC 2121 Natural Regions of the United States (or Biological Science Option)	3
SPC 3601 Public Speaking	4
Economics	4
Total	17
Yearly Total	**50**

SOPHOMORE YEAR

First Quarter

Humanities	4
APB — Biological Sciences	3
Foreign Language or Quantitative Option	5
MMC 2100 Writing for Mass Communications	3
Total	15

Second Quarter

Humanities	4
APB 2151 Biological Sciences	3
Foreign Language or Quantitative Option	5
AMH 2010 U.S. History	5
Total	17

Third Quarter

Humanities	4
Foreign Language or Quantitative Option	5
AMH 2020 U.S. History	5
English (2000 level)	4
Total	18
Yearly Total	50

LAW

The College of Law offers a program leading to the degree of Juris Doctor. Admissions is limited to those with a bachelor's degree from an accredited college or university who have satisfactory undergraduate records and have attained a satisfactory score on the Law School Admissions Test. Also offered is a one-year program leading to the degree of Master of Laws in Taxation. This program is open to those students who hold the J.D. degree and who show significant potential for success in the L.L.M. program. For detailed information on admission requirements, course and programs, see the College of Law catalog.

PRELAW PROGRAMS

Admission to law school is a highly selective process. Applicants are selected primarily on the basis of quantitative factors which demonstrate the potential for success in law school, the legal profession, and in other law related careers. One of these factors is the Law School Admission Test (LSAT) which should be taken at the end of the junior or beginning of the senior year, and which has a separate writing ability test score. Another primary selection factor is the student's overall grade point average (GPA). Approximately 70 percent of those accepted to law school are chosen by reference to these two factors alone. About 20% of those accepted are chosen from a "hold" category. Applicants whose LSAT scores and GPA's do not put them in either the "accept" or "reject" categories are placed in the "hold" category, and have their records carefully examined in detail. Decisions to admit any applicant from the "hold" category are based on factors in addition to the factors mentioned above such as trends in academic effort and performance (ascending or descending), the types of courses and level of difficulty of academic loads, the college and discipline of the major, leadership and extracurricular activities, and maturing experiences such as employment or military service. Letters of evaluation from teachers or employers will usually be requested only from those applicants placed in the "hold" category.

The class entering law school in September 1977 averaged a 3.50 GPA, 650 on the LSAT, and 60 on the written ability test portion of the LSAT.

While any undergraduate specialization will prepare a student for law school, the beginning law student must possess the fundamental skills necessary for effective oral and written communication. The student who lacks writing skills should study advanced English composition. Any course that tests one's ability to organize a body of data and reason from it will be beneficial. Also useful will be courses in constitutional law, English and American history, economics, political processes, and sociology. A course in basic accounting principles is recommended.

Prelaw students should consult the current PreLaw Handbook prepared by the Law School Admissions Council and the Association of American Law Schools. A one credit course, ASC 180, Introduction to the Legal Profession, is available under the S-U option.

Freshmen and transfer students planning careers in law should register with the Office of Preprofessional Education, 2008E GPA Building during their first quarter on campus and maintain a record of their activities each succeeding quarter. In addition to serving as a central source of information on all matters relating to prelaw advisement, the Office of Preprofessional Education acts as a clearing-house for information, catalogues, and LSAT Bulletins relating to prelaw preparation and application procedures. The Office provides students with academic advisers, and serves as a central office for collecting and forwarding letters of evaluation for those applicants placed in the "hold" category. In addition the Office of Preprofessional Education coordinates the activities of the prelaw advisers located in the various departments and colleges listed below, and provides them with current data and information needed for effective advisement.

Advisers for prelaw students are available in University College, College of Business Administration, and in the Departments of Economics, English, History, Philosophy, Political Science, and Sociology.

MEDICINE, DENTISTRY, AND OPTOMETRY

The University of Florida, rather than having a separate, organized premedical, predental or preoptometry degree program, allows a preprofessional student to major in a program offered by any department or college within the University. Dental, medical and optometry schools expect applicants to have received a liberal education and to have performed at a high level of academic accomplishment, including work in the required science core courses listed below. Selection for admission to these professional schools is usually based primarily on overall grade point average, (GPA), science GPA, admission test scores, letters of evaluation of the applicant from faculty familiar with the applicant's qualifications in comparison with other preprofessional students, and interviews conducted by the professional schools' selection committees. Students from the University of Florida admitted to dental schools in 1976 averaged 3.3 in overall and science GPA, with scores of 5 or more in the academic and perceptual parts of the Dental Admissions Test (DAT). University of Florida graduates who were admitted to medical schools in 1976 averaged 3.6 in overall and science GPA, with an average score of 590 on the Medical College Admission Test (MCAT). The average GPA for students accepted into regional schools of optometry was 3.0 in 1976.

Freshman students planning careers in medicine, dentistry and optometry should register with the Office of Preprofessional Education, 2008E General Purpose A Building, during their first quarter at the University, and normally should apply for admission to the College of Arts and Sciences at the end of their first quarter of residence. Admission may occur at a later time, but the student may lose valuable curricula flexibility associated with the programs described below if the transfer is greatly delayed. Students transferring from other colleges and universities should also register with this office during the first quarter of residence. In order to inform themselves fully of requirements, procedures and other factors relating to preprofessional preparation, students should obtain a current copy of the *PREPROFESSIONAL GUIDE* prepared by and available through the Office of Preprofessional Education.

A one-credit course ASC 181, Introduction to Medicine and Dentistry, is available under the S-U option.

In addition to serving as a central source of information on all matters pertaining to the preprofessional curricula, the Office of Preprofessional Education acts as a clearinghouse for information, catalogues and application forms relating to medical, dental and optometry school requirements and admission procedures. The office provides students with academic advisers and serves as a central office for collecting and forwarding letters of recommendation, evaluation and certification to the schools selected by the students.

The Office of Preprofessional Education coordinates the activities of the preprofessional advisers located in various departments and provides them with current data and procedures needed for effective advisement. Following initial contact with this office, the student will be referred to an adviser who will help plan a program and upper-division major best suited to the student's aims and abilities. The adviser should remain aware of the student's progress, and inform the Office of Preprofessional Education of academic difficulties and particularly of academic excellence. In the latter case, the adviser may recommend a student for the Junior Honors Medical Program described below and/or for a departmental honors program.

PREMEDICAL, PREDENTAL, PREOPTOMETRY CURRICULAR OPTIONS

The preprofessional student must satisfy the following core requirements (usually prior to application to the professional schools):

Required Core Courses:

1) A complete general chemistry sequence (terminating with CHM 2043C, CHM 2047C, CHM 2056C, or CHM 2052C.
2) A complete organic chemistry sequence (terminating with CHM 3211L, and CHM 3211 or CHM 3216.
3) At least 12 credits in biology (usually BSC 2010C, BSC 2011C, BSC 2012C.
4) A complete physics sequence (terminating with PHY 2052 and PHY 2052L or PHY 2042 and PHY 2042L.
5) Analytic geometry and calculus (MAC 3311 and M5C 3312.

6) One year of college level English.
These courses will also meet the basic requirements for schools of Chiropractic, Osteopathic, and Podiatric medicine.

Premedical students wishing to qualify for the Schools of Medicine at the University of Miami and the University of South Florida must also complete PCB 3253C or PCB 3253, or PCB 3060C or AGR 3303, STA 3023 and either CHM 3120C or CHM 3400 or BCH 4313 or BCH 4203.

The usual timetable for application to professional school is:
1) Complete the preprofessional course requirements within the first three years of college, preferably by the summer of the year preceding the year of graduation.
2) Apply for and take the admission test (DAT, MCAT, or OCAT), preferably in the spring of the year preceding the year of graduation. Delay in taking the test until the fall may reduce chances of admission.
3) Have letters of evaluation collected in a confidential file by the Office of Preprofessional Education (see procedure described in instructions to Preprofessional Students in the *PREPROFESSIONAL GUIDE* available at the Office of Preprofessional Education) during the third year of college.
4) Submit completed applications (including admission test scores and letters of evaluation) to the professional schools by the end of August or the first part of September (at the latest) of the year preceding the year of graduation. Delay in completion of applications beyond that date may reduce chances of admission.
5) Maintain a high academic performance and send transcripts of subsequent quarters to professional schools at which your application is being considered.
6) Interviews for applicants being seriously considered are conducted in the fall and winter by professional schools.
7) Notices of acceptance or rejection are usually received by the spring of the following year although some acceptances may be offered as late as the week before classes start.

Besides meeting the preprofessional course requirements, students are strongly recommended to gain some experience in the health care delivery environment of their career choice. Such experience may be obtained by participation in the programs of the Preprofessional Honor Society-Alpha Epsilon Delta, and the Preprofessional Service Organization-PSO at the University of Florida. More details about these programs and applications are available at the Office of Preprofessional Education.

STANDARD PROGRAM FOR YEAR 1

Many students reach a decision to prepare for a career in medicine or dentistry during or after one year of college. Such students will usually have to complete requirements at a more accelerated rate if they wish to graduate on schedule. The degree of acceleration should be discussed with a preprofessional adviser in their major department.

Any sequence of general chemistry is acceptable. The basis for choice among CHM 2040, 2045C, 2050C (Honors), and CHM 2055C is outlined in the catalog section preceding chemistry course listings. For qualified students possessing a good background in chemistry, physics and mathematics, the CHM 2055C sequence offers a number of advantages, including time flexibility. MAC 3311, 3312 and (STA 320) STA 3023 should be completed this year. American Institutions and English requirements should be completed by taking the appropriate courses or via College Level Examination Program (CLEP) credit. Liberal arts elective courses, and a foreign language, are among options for students who have completed American Institutions and English by CLEP credit.

STANDARD PROGRAM FOR YEAR 2

If a student has not finished general chemistry, it should be completed in this year. Organic chemistry should be begun and completed this year. CHM 3200 is not acceptable. Qualified students are advised to consider application to the honors sequence CHM 3215, 3216. Three quarters of biology BSC 2010C, 2011C, and 2012C should be completed by the end of this year. BCH 3713 may be elected during the second year as an introduction to human molecular biology and biochemistry. Students should also complete the humanities requirements by coursework unless they have previous CLEP credit. Students with available time might consider beginning either a physics or foreign language sequence during this year. Those having a background in foreign language prior to entering the University may satisfy all or part of the foreign language requirement by taking a placement examination, which is offered several times during the year by the foreign language departments.

Second-year premedical students who have a 3.5 average or higher and who have completed the above core requirements may want to apply for admission to the Junior Honors Medical Program. This program allows early acceptance to the University of Florida College of Medicine and participation in third-year medical school seminars. Interested students should contact the Assistant Dean for Preprofessional Education in the College of Medicine (128 Medical Sciences Building). Applications for this program are accepted during the winter quarter, and final selection is made during the spring quarter of the sophomore year.

YEARS 3 AND 4

During year 3 students generally complete any preprofessional core requirements as yet unfilled. During year 3 or 4 the foreign language requirement must be completed.

The remainder of year 3 and 4 is devoted to completion of a departmental major and elective courses in science and other areas. Professional schools attach no bias toward any particular major. Thus, although most students major in one of the sciences, it is equally possible and desirable to major in some other area. In general, the better the student's science and overall academic averages during the first two years, the greater the latitude that student will have in a choice of major. Since most preprofessional students do major in one of the sciences, the various common preprofessional science options are outlined below.

1) Botany Major - Students planning a major in botany through the College of Arts and Sciences should schedule BOT 2021C by Fall quarter of the third year (preferably sooner if scheduling permits). During the third and fourth years PCB 3033C, BOT 3503C, and BOT 3503L, BOT 3303C or BOT 5225C, BOT 3153C or BOT 5725C, and PCB 3060C or AGR 3303, AGR 3305L should be completed. Remaining hours needed to complete the minimum of 36 hours for the major in botany will be chosen as elective credits to meet the specific interest of the student. Students interested in research or departmental honors should schedule BOT 4905 during the fourth year.
2) Chemistry Major - If quantitative analysis has not been taken as part of the CHM 2055C sequence, then quantitative analysis CHM 3120C or CHM 3125C is required. A student may elect either physical chemistry sequence CHM 4410, CHM 4411, CHM 4412, CHM 4411L (MAP 3302 is co-requisite) or CHM 3400, CHM 3401, CHM 3401L. Students who choose the CHM 3400 to CHM 3401L sequence must also take either CHM 4130 and CHM CHM 3125C) is a required background course for this take PCB 3060C PCB 3060L and at least one course from in their last year.
3) Microbiology and Cell Science Major - Students interested in a microbiology and cell science major should schedule MCB 3013, MCB 3013L after at least one quarter of organic chemistry. BCH 4313 is a required course for the microbiology major. In addition to the above, the following courses constitute the remainder of the major program: PCB 3136 and at least 21 credits of departmental course offering in the 4000 series. In some cases which are determined by the microbiology undergraduate coordinator, BCH 4203 may be substituted for MCB 4413. Students interested in undergraduate research projects as well as departmental honors should discuss MCB 4910 with the undergraduate coordinator. In addition, quantitative analysis (either CHM 3120C or CHM 3125C) is a required background course for this major.
4) Zoology Major - A preprofessional zoology major must take PCB 3060C, PCB 3060L and at least one course from each of the following four sets:

a. ZOO 3303C, ZOO 3203C
b. ZOO 3703C, PCB 3253C
c. PCB 4040C or PCB 4675
d. ZOO 4755 or PCB 4745

(Suggested course selections for preprofessional students are ZOO 3303C, ZOO 3703C, PCB 3253, PCB 4675, ZOO 4755, or PCB 4745.

At this point, the student will have 38 major credits which should include the BSC 2010C, BSC 2011C, BSC 2012C sequence and will complete the major requirements in zoology. The student should also be aware of the possibility of research experience through ZOO 4905. Two quarters of ZOO 4905 are required for departmental honors.

5) Biochemistry Major - Although an undergraduate major is not currently available, the undergraduate biochemistry program (see description under Biochemistry) offers a comprehensive series of courses providing a concentration in biochemistry and molecular biology. Courses in the sequence BCH 3713, BCH 4313, BCH 4203, BCH 5050, and PCB 4535 may supplement or substitute for comparable courses in related major programs. Students desiring research experience in this area should consider BCH 4910. At some professional schools students having taken a biochemistry as undergraduates may exempt themselves from the biochemistry course taught as part of the basic medical science sequence.

6) Interdisciplinary Major - This major, described elsewhere in the Arts and Sciences section of the catalog is available for superior preprofessional students.

Transfer students who have received credit for the first two years of college at another institution should have no difficulty in adapting themselves to the above format with the help of a Preprofessional adviser. Since relatively heavy weight is placed by professional schools upon the performance of transfer students in their third year, such students should plan on taking at least 30 hours in science during the first three or four quarters at the University of Florida. Those transfer students who have completed all of the basic preprofessional course requirements should consider taking additional courses in either chemistry, zoology, microbiology, biochemistry, physics, mathematics or statistics. By doing well in courses which are taken by many preprofessional students at the University of Florida, transfer students can enhance their academic records and provide admission committees with a basis of comparison of their academic abilities with other applicants.

Choice of electives: Professional schools do not appear to have any significant bias toward elective courses chosen by students. These schools, in fact, look with favor upon students who have shown broad interests and educational development during their college career. Commonly selected science electives include senior research, BCH 3713, BCH 4313, 4203, MCB 3013, 3013L, ZOO 4755, PCB 5745. Students who have displayed academic weakness in any of the required Preprofessional core course areas (especially chemistry or biology) generally are advised to offset such weaknesses by stronger performances at a more advanced level. It should be reemphasized that students applying to the University of Miami School of Medicine and to the University of South Florida College of Medicine should complete additional advanced courses as listed above before graduation regardless of their major.

CLEP Credit: It is generally agreed that receipt of such credit does not imply the equivalent of educational experience received in a University level course. CLEP credit does not substitute for any of the preprofessional core requirements listed above. In general, the utilization of CLEP credit will give students some additional flexibility in completing their educational requirements. In some cases, this flexibility will take the form of accelerated entry into professional school. Preprofessional students using CLEP credit to satisfy general education requirements are encouraged to register for liberal arts courses in English, social sciences and humanities, at the 2000 level or above.

Post-baccalaureate undergraduate work: Students who have received a BS or BA degree and have not qualified for professional school because of a lack of quality and/or quantity of preprofessional work may want to consider additional work at the undergraduate level to make up these deficiencies. Students interested in this possibility should consult the Director of the Office of Preprofessional Education, 2008E General Purpose A Building.

NURSING

General Education Requirements

	Credits
English	6
Social Science (SSI 2110 and SSI 2120 or SSI 2122)	4
ANT 2410 or SOC 2000	4-5
Physical Science ISC 2400 and ISC 2401 or CHM 1020 and CHM 1021 or ISC 2452 or PSC 2701	6
Biological Science (APB 2150, APB 2151, APB 2153, BSC 2010, ANT 3511 are recommended)	8
Humanities	12
Behavioral Studies BES 2241, BES 2351, MAF 2200, PSY 2013 or PCO 3714 are recommended	8
PEM 1100 Physical Education	2
Sub-total	52

*Preprofessional	
Microbiology APB 2170-APB 2170L	5
**Human Nutrition HUN 2201	4
Developmental Psychology or Human Growth and Development DEP 3002 or EDF 3110	4
Human Anatomy and Physiology PET 3320 and PET 3350	8
Expository Writing	3
Statistics or Algebra	4
Chemistry	4
sub-total	32
Electives	12
Total	96

*Preprofessional courses cannot be met by CLEP.
**HUN 2201 may be taken by correspondence.
NOTE: General Education Requirements are completed only when the last three courses listed under Pre-professional have been completed.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
ENC 1102 English	3
APB 2150 The Biological Sciences	3
SSI 2110 The American Institutions	3
MAC 1132 Algebra and Trigonometry	5
PEM 1100 Physical Education	2
English	3
APB 2151 The Biological Sciences; Ecology & Behavior	3
SSI 2120 or SSI 2122	3
CHM 1020	4
Elective	8
English	3
APB 2153 The Biological Sciences: Cell and Organism Biology	3
EDF 3110 or DEP 3002	4-5

SOPHOMORE YEAR

	Credits
APB 2170 and APB 2170L	5
HUM 2210 Western Humanities	4
SOC 2000 or ANT 2402	4-5
MAF 2200 or PSY 2013	4
HUN 2201 Fundamentals of Human Nutrition	4
HUM 2230 Western Humanities	4
ISC 2401 or CHM 1021	3-4
PCO 3714, BES 2351 or MAF 2200 or MAF 2402	4

HUM 2250 Western Humanities 4
PET 3320 Applied Anatomy 4
PET 3350 Applied Physiology 4
Elective 4-8
PSC 2701 or ISC 2452 3

PHARMACY

The program of study leading to the degree of Bachelor of Science in Pharmacy is divided into two parts—two years of prepharmacy in the University College and three years in the College of Pharmacy.

In keeping with the accreditation requirements of the American Council on Pharmaceutical Education, all students must be enrolled in one or more required pharmacy courses in the College of Pharmacy for a minimum of nine quarters, regardless of the number of studies completed in other fields. Upon applying for admission to the College of Pharmacy, it is advised that the student see the College of Pharmacy Assistant Dean for Student Affairs, (PHM, room P-111) to be sure that all recommended prepharmacy courses will be completed by September.

Prepharmacy Program

To be considered for admission to the College of Pharmacy the applicant must have: (1) earned at least 96 quarter hours of acceptable college credit with an overall average of "C" or higher on all course work attempted; (2) completed all lower division courses required for the desired curriculum as indicated below in the program for the Freshman and Sophomore years in University College; (3) passed all the required preprofessional courses (general and organic chemistry, physics, biological sciences and mathematics) within the prepharmacy curriculum with an average of "C" or higher; and (4) submitted scores on the Pharmacy College Admission Test (PCAT) to the College of Pharmacy. See *College of Pharmacy* for further information on Requirements for Admission and PCAT.

The courses listed below are recommended for the first two years of prepharmacy. For academic advisement and other information the Office for Student Affairs, College of Pharmacy (Room P-111), J. Hillis Miller Health Center, is pleased to assist students as well as to facilitate their application.

	Credits
SSC American Institutions	9
EH English	9
Behavioral Studies or Equivalent	3
*CHM 2045C, 2046C, 2047C Gen. Chem. & Qual. Anal.	12
The Humanities	12
BSC 2010C, 2011C, 2012C, BIO 203. Integrated Biology Core or	12
ZOO 2010C Introd. Zoology Laboratory and	4
ZOO 2011C Principles of Animal Biology	5
PHY 2050, 2051, 2052 General Physics	8
**PHY 2050L, 2051L, 2052L Physics Laboratory	2
CHM 3210, 3211 Organic Chemistry	7
CHM 3210L, 3211L Organic Chemistry Laboratory	3
PEM 1100 Physical Education	2
***Approved Electives	16-19
Total	96

*Students not qualified for this sequence should take the CHM 2040, 2041C, 2042C, 2043C series (16 credits).

**A minimum of 10 credits is required for students planning to pursue the community and hospital areas. Students wishing to major in industrial and research pharmacy should complete the entire sequence.

***The electives shall include a requirement in mathematics. Recommended courses are MAC 1132 and at least one of the following: MAC 2223, 2233, or the first course in the MAC 3311, 3312 series. Students planning to pursue the industrial or research option in pharmacy should take MAC 3311. The remaining elective credits are to be chosen by the student according to his interests. However, the student is advised to see a counselor in the College of Pharmacy for suggested courses.

The professional sequence of courses is on an annual basis only beginning in September each year. Students are admitted to the College of Pharmacy annually, in September only, when the fall quarter begins. Students in prepharmacy in University College should plan their course schedules for each term so that the minimum 96 credits and specific course requirements are satisfied by June of the year expected to enter the College of Pharmacy.

PHYSICAL EDUCATION, HEALTH AND RECREATION

University College students expecting to major in the College of Physical Education, Health and Recreation should pursue one of the following programs:

A. FOR MEN AND WOMEN INTENDING TO MAJOR IN PHYSICAL EDUCATION

General Education Requirements

	Credits
American Institutions	
POS 2041 American Federal Gov't. or	
POS 2112 American State and Local Gov't.	3-5
SSI American Institutions	6
Behavioral Studies	
PSY 2013 General Psychology or	
PCO 3714 Personal Growth	4
Biological Science	
APB 2153 Biological Science Cell and Organism Biology	3
PET 3320 Applied Human Anatomy	4
PET 3350 Applied Human Physiology	4
English Composition (ENC 1102, ENG 1200, ENG 1400 or ENG 1710	11
Humanities	12
Mathematics	4
Health Education:	
HES 2000 Personal and Family Health	4
HES 2400 First Aid and Personal Safety	3
PEM 1100 Physical Education: Basic Concepts	2
Physical Science	
ISC 2400 Fundamentals of Physical Science or	
PHY 2004 Applied Physics or	
PHY 2050/2050L General Physics and Lab	4-5
ISC 2401 & 2402 Fundamentals of Physical Science	6
Speech:	
SPC 3601 or SPC 2300	4-5

Preprofessional Requirements

	Credits
DAE 2320 Modern Dance	3
DAE 2360 Folk and Social Dance	3
HES 2000 Personal and Family Health	4
HES 2400 First Aid and Personal Safety	3
PEO 1011 Softball and Flag Football	2
PEO 1511 Soccer and Related Sports	2
PEO 1521 Volleyball and Team Handball	2
PEO 2031 Recreational Activities I	2
PEO 2032 Recreational Activities II	2
PEO 2121 Golf	2
PEO 2341 Tennis	2
*PEO 2561 Field Hockey, Weight Training and Conditioning	3
PEO 3621 Basketball	2
PEP 1301 Track and Field	2
PEP 2201 Gymnastics	3
*PEP 2401 Martial Arts, Weight Training and Conditioning	3
*PEP 2421 Wrestling, Weight Training and Conditioning	3
PEQ 1121 Swimming	2
PET 3590 Professional Seminar in Physical Education	1
PET 3940 Field Experience in Physical Education I	1
PET 3944 Field Experience in Physical Education II	1
SPC 3601 Public Speaking or SPC 2300 Introduction to Speech Communication	4-5
Second Teaching Field Electives	9

*Student is to select only one of these three courses.

Suggested Course Sequence

FRESHMAN YEAR

	Credits
SSI 2110 American Institutions Culture and The Socializing Institutions	3
ENC 1120 English Expository Writing	3
ISC 2400 Fundamentals of Physical Science	4
PEM 1100 Basic Concepts	2
Choice of preprofessional courses listed above	2-4
SSI 2120 American Institutions The Emergence of the Economic and Political Institutions	3
ENG 1200, 1400, 1710 English Intro. to: Fiction, Drama, Poetry	4
ISC 2401 Fundamentals of Physical Science	3
PEM 1201, PEN 1121, PEL 1121, PEL 1341 as needed Gymnastics, Golf, Swimming, Tennis	1
Choice of preprofessional courses listed above	2-5
POS 2112 American State and Local Gov't. or POS 2041 American Federal Gov't.	3-5
ENG 1200, 1400, 1710 English Intro. to: Fiction, Drama, Poetry	4
ISC 2402 Fundamentals of Physical Science	3
PEM 1201, PEN 1121, PEL 1121, PEL 1341 as needed Gymnastics, Golf, Swimming, Tennis	1
Choice of preprofessional courses listed above	2-5

SOPHOMORE YEAR

	Credits
MGF 1113 Fundamental Mathematics	4
HUM 2210 Western Humanities	4
APB 2153 Biological Science Cell and Orgranism Biology	3
PET 3590 Professional Seminar in Physical Education	1
Choice of preprofessional courses listed above	2-5
Choice of general physical education courses as needed to make up deficiency or for enrichment	0-1
HUM 2230, 2250 Western Humanities	4
PET 3320 Applied Human Anatomy	4
PET 3940 Field Experience in Physical Education I	1
PSY 2013 General Psychology or PCO 3714 Personal Growth	4
Choice of preprofessional courses as listed above	2-4
Choice of general physical education courses as needed	0-1
HUM 2250, 2410, 2420 Humanities Western, Asian, and African	4
PET 3350 Applied Human Physiology	4
PET 3944 Field Experience in Physical Education II	1
SPC 3601 Public Speaking or SPC 2300 Introduction to Speech Communication	4-5
Choice of preprofessional courses as listed above	2-3
Choice of general physical education courses as needed	0-1

B. FOR MEN AND WOMEN INTENDING TO MAJOR IN HEALTH EDUCATION

General Education Requirements

	Credits
ENG English	9
MAC or MGF	4
SSI Social Sciences	9
HUM The Humanities	12
PSC Physical Sciences	4
GLY Geology	4
CHM Chemistry	4
APB Biological Sciences	10
PEM 1100 Basic Concepts of Physical Education	2

Preprofessional Requirements

	Credits
HES 2000 Personal and Family Health	4
HES 2001 Community and Environmental Health	4
HES 2400 First Aid and Personal Safety	3
PSY 2013 General Psychology	4
SPC Speech	4
SOC 2000 Principles of Sociology	4
Electives for concentration area(s)	18

Suggested Course Sequence

FRESHMAN YEAR

	Credits
SSI Social Science	3
ENG English	3
APB 2150 Biological Science	3
HES 2000 Personal and Family Health	4
PEM 1100 Basic Concepts of Physical Education	2
SSI 2120 Social Science The Emergence of the Economic and Political Institutions	3
APB 2150 Biological Science Genetics and Evolution	3
ENG English	3
PSC Physical Science	4
Electives for concentration area(s)	4
MGF or MAC	4
ENG English	3
APB 2153 Biological Science Cell and Organism Biology	3
APB 2150L Lab Biological Science Lab	1
Electives for concentration area(s)	9

SOPHOMORE YEAR

	Credits
HUM 2210 Humanities Western	4
SOC 2000 Principles of Sociology	4
GLY Geology	4
HES 2001 Community & Environmental Health	4
HUM 2230 Humanities	4
CHM Chemistry	4
SPC Speech	4
HES 2400 First Aid and Personal Safety	3
APB 2170 Microbiology	3
APB 2170L Discussion Laboratory in Microbiology	2
HUM 2250 Humanities Western	4
PSY 2013 General Psychology	4
Electives for concentration area(s)	4

C. FOR MEN AND WOMEN INTENDING TO MAJOR IN RECREATION

General Education Requirements

	Credits
ENC English	9
Fundamental Mathematics	4
Behavioral Studies	6
American Institutions	9
The Humanities	12
*Physical Sciences	9
*Biological Sciences	9
PEM 1100 Physical Education	2

Preprofessional Requirements

	Credits
MUY 3601 Music in the Field of Recreation	4
DAE 2360 Folk and Social Dance	3
PEQ 1121 Swimming	2
HES 2400 First Aid	3
SPC 2300 Introduction to Speech Communications	4

Five activity hours requiring at least one from each of the following five areas:

- **a. gymnastics, tumbling, modern dance, or body conditioning**
- b. racket sports
- c. combatives
- d. individual sports - golf, archery, bowling, or track
- e. team sports - volleyball, basketball, soccer, softball, or field hockey 5

Electives 18

*Three credits of one of these may be omitted.

Suggested Course Sequence
(Public Recreation Concentration)
FRESHMAN YEAR

	Credits
*SSI 2110 Soc. Science	3
English	3
PSC 2501 Phys. Sci.	4
LIS 2001 Use of Books and Library	2
PEM 1100 Physical Education Activity Requirement	1
SSI 2120 Soc. Sci.	3
ENC English	3
PSC 2701 Physical Sci.	3
POS 2112 Amer. State & Local Gov't.	3
Activity Requirement	1
PEQ 1121 Swimming	2
SSI 2122 Soc. Sci.	3
English	3
SPC 2300 Introduction to Speech Communications	5
HES 2400 First Aid	3
Activity Requirement	1
Electives	4

SOPHOMORE YEAR

	Credits
Behavioral Studies	3
HUM 2210 Humanities	4
APB 2150 Biological Science	3
DAE 2360 Folk & Social Dance	3
Activity Requirement	1
LEI 3507 Special Events: Administration and Programming	3
Behavioral Studies or CPS Physical Science	3
HUM 2230 Humanities	4
APB 2151 Biological Science	3
SOC 2000 Principles of Sociology	4
Activity Requirement	1
MGF 1113 Fundamental Math	4
HUM 2250 Humanities	4
APB 2153 Biological Science	3
PSY 2013 General Psychology	4

(Therapeutic Recreation Concentration)
FRESHMAN YEAR

	Credits
SSI 2110 (SOC 2000)	4
English	3
SSI American Institutions	4
ENC English	3
*PSC 2501 Physicial Science Our Environment	4
PL	2
HES 2400 First Aid	3
*SSI 2120 Social Science	3
ENC English	3
PSC 2701 Physical Science	3
Electives	3
PSY 2013 Introduction Psychology	4
*SSI 2122 Social Science	3
ENC English	3
PEQ 1121 Swimming	2
SPC 3601 Public Speaking	4

SOPHOMORE YEAR

	Credits
ZOO 2010C (APB 2150)	4
HUM 2210 Humanities	4
DAE 2360 Folk & Social Dance	3
HES 2000 Individual & Family Health	5
HUM 2230 Humanities	4
LEI 3330 Camp Counseling	4
APB 2151 Biological Science	3
Elective	6
MGF 1113 Fundamental Math	4
HUM 2250 Humanities	4
APB 2153 Biological Science	3

*Many choices in CPS, SSC, HUM, and CBS are acceptable. The science requirement calls for at least six credit hours in one science and nine credit hours in the other.

SCHOOL OF
ACCOUNTING

The School of Accounting

GENERAL STATEMENT

The School of Accounting of the University of Florida was established July 1, 1977. The objective of the School of Accounting is to provide the technical and general education for graduates to assimilate the proficiency necessary to enter the accounting profession and progress rapidly through levels of increasing responsibility. The field of accounting offers outstanding opportunities in such areas as public accounting (financial/auditing), industrial accounting (cost/managerial/systems) nonprofit accounting and tax accounting.

The accountant deals with complex problems in the business world. This requires a thorough knowledge of business operations and the environment of business as well as accounting knowledge. In addition to the demanding technical skills, an ability to communicate clearly in both verbal and written form is essential. The accountant interacts with people constantly and must develop interpersonal skills as well. Accounting is more of an art than a science and professional judgment is an important element in the practice of accountancy. Although accounting is unusually demanding and requires a high achievement motivation in order to succeed, the rewards are high.

The field of accounting for many years was primarily thought of as exclusively a man's domain. However, in recent years an increasing number of women have been entering the field and today the opportunities are substantial. This same opportunity exists for all minorities.

SCHOLARSHIPS AND ASSISTANTSHIPS

Information about general financial aid can be obtained from the Director of Student Financial Aid, University of Florida, Gainesville, Florida. Information concerning scholarships available specifically for fourth and fifth year accounting students can be obtained by writing to the School of Accounting, University of Florida, Gainesville, Florida.

HONORARY AND PROFESSIONAL ORGANIZATIONS

Beta Alpha Psi

This professional accounting fraternity has 115 chapters nationally. Upsilon Chapter was the 18th chapter to be founded (in 1938) and is recognized as one of the best chapters in the country. An active professional program is conducted each year including guest speakers, panel discussions, field trips, and other activities designed to promote professional awareness. Beta Alpha Psi cosponsors the Graduate Accounting Conference which annually attracts more than 100 accounting practitioners. Membership requirements include high ethical standards and a minimum grade point average. Additional information concerning these requirements may be obtained from the School of Accounting.

Beta Gamma Sigma

Election to this national business honorary society is based on scholarship and character. For additional information apply to the Office of the Dean, College of Business Administration.

ACCOUNTING RESEARCH CENTER

The Accounting Research Center was organized in 1976 to sponsor and encourage both frontier-seeking research and research that has immediate benefit to the profession. The Center provides an opportunity for graduate students to become involved in specific research projects on a regular basis. Occasionally research projects provide a similar opportunity for undergraduate students. The Center publishes research results in a working paper series. For information contact the Director of the Accounting Research Center, School of Accounting, University of Florida, Gainesville, Florida.

PROGRAM OF STUDY

Graduates of the undergraduate program will receive the degree Bachelor of Science in Accounting. The undergraduate accounting program is highly structured in order to provide students with a working knowledge of the basic accounting framework and each of the different professional areas of accounting in addition to the underlying business and related disciplines.

The widespread range of subjects necessary for the adequate preparation of an individual preparing for a professional career in accounting does not leave room for specialization within the undergraduate accounting program. National agencies such as the American Institute of Certified Public Accountants' Board on Standards for Programs and Schools of Professional Accounting and the American Accounting Association Education Committee recommend a five year program of study. Students are urged to consider the five year professional program leading to the degree Master of Accounting. Details concerning the five year program including the specialization areas of financial/auditing, managerial/cost, systems and tax are included in the *Graduate School Catalog* which can be obtained by writing the Director of Admissions, University of Florida, Gainesville, Florida. Additional information can also be obtained by contacting the School of Accounting, University of Florida, Gainesville, Florida.

REQUIREMENTS FOR ADMISSION

The University of Florida and the School of Accounting encourages applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this School. It should be understood however that minimum requirements are given and that admission to this School is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objective, pattern of courses previously completed, quality of previous academic record, and test data will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested.

University College Students: To be eligible for admission to the School of Accounting, a University College student must have completed at least 18 quarter credits of preprofessional courses. Acceptance to the School of Accounting will be based upon the grade point average earned and prerequisite courses completed.

Transfer Students: To be eligible for admission to the School of Accounting, a transfer student must satisfy the minimum requirements for admission that are set forth in the transfer admissions section below. Additionally, the applicant should complete, as far as possible, the courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the University College section. A minimum of 18 quarter credits of preprofessional courses must be completed prior to admission to the School of Accounting. Completion of these courses and receipt of an AA degree does not guarantee acceptance to the School of Accounting. Acceptance to the School of Accounting will be based upon prerequisite courses completed and the student's earned grade point average.

A. Students attending four year colleges, who wish to transfer after two years, should follow a program of

general education and preprofessional courses similar to the Basic Curriculum for the Freshman and Sophomore years for students desiring to enter the School of Accounting which is outlined in the University College section of this catalog. Prerequisite courses in business subjects during the first two years should be completed as indicated in paragraphs B.3 and B.4 below. Courses should not be taken during the first two years which are offered only at the upper division level at the University of Florida.

B. Junior College and Community College students should:

1. Complete the university transfer program at the junior college.
2. Complete the general education requirements established for the junior college.
3. Complete, insofar as possible, all of the following courses which are prerequisite to any advanced professional work in the School: an introductory course in accounting, a one-year sequence in economics, a one-year sequence in analytical geometry and calculus, an introductory course in statistics, an introductory course in EDP, a course in logic.
4. Complete the one-year courses in analytical geometry and calculus and in economics at the junior college. Differences in the order of presenting material in basic one year courses make it highly undesirable to take parts of such courses in different institutions.
5. Choose elective courses needed to complete the total 64 semester hours in the university transfer program from such areas as mathematics, natural sciences, social science, foreign language, and humanities.
6. Avoid professional coursework that is available at the University of Florida only as 3rd and 4th year courses. TRANSFER STUDENTS ARE ADVISED TO AVOID SUCH COURSES AS BUSINESS LAW, PRINCIPLES OF MARKETING, PRINCIPLES OF MANAGEMENT, PRINCIPLES OF INSURANCE, PRINCIPLES OF REAL ESTATE, PERSONNEL MANAGEMENT, AND COMPUTER MANAGEMENT COURSES. A maximum of six quarter credits may be allowed for courses taken during the first two years which are available only as third and fourth year professional courses in the College of Business Administration at the University of Florida.

Any credit granted for such work will be in the form of undistributed elective credit without reference to specific courses taken. In no case may such courses be in accounting. In the case where a student wishes to waive an upper division core course and substitute a community college course, waivers may be granted on an individual basis but the student will be required to take another course in the area being waived. The course will be specified by the Department Chairman of the area.

Provisional Admission: Within space limitations, students who do not meet precisely the admission requirements indicated in the appropriate section above may be granted provisional admission to the School of Accounting. The Director of the School of Accounting will specify the courses to be completed and minimum grade points to be earned by the student during the term of his provisional admission. Provisional status will be removed and the student fully admitted to the School of Accounting provided he fulfills the conditions set forth in his provisional admission. The student will be excluded from further enrollment in the School of Accounting if he fails to satisfy the conditions of his provisional admission.

GENERAL REGULATIONS

STUDENT RESPONSIBILITY: The student must assume full responsibility for registering for the proper courses and for fulfilling all requirements for his degree. He is also responsible for completing all courses for which he is registered.

Courses may be dropped with advisor approval until the end of the first week of the quarter without petitioning. After the first week courses may be dropped or changed without penalty only through the administrative office of the School (by petitions) and the Registrar.

Seniors must file formal application for a degree in the Office of the Registrar early in the quarter in which they expect to receive the degree. The official calendar shows the latest date on which this can be done.

NORMAL LOADS: The average course load in the School of Accounting is 15 credit hours. A student may be permitted to register for additional hours if in the opinion of his academic adviser, his academic record justifies this. Students who wish to take less than 12 hours should be aware that certain university privileges and benefits require a minimum registration. It is the student's responsibility to verify the minimum registration necessary for these benefits.

RESIDENCE: The last 45 quarter hours to be applied toward a degree must be completed in residence in the School of Accounting. In special cases this requirement may be waived if the student has a 2.9 average or better, and his petition to take non-resident work has been approved in advance by the faculty of the School. In any case, no student may take more than nine quarter credit hours by extension or correspondence among the 97 quarter credits of upper-division work required for the baccalaureate degree; and such work must have prior approval for each individual student by the Petitions Committee of the School. However, accounting courses may not be taken by extension, by correspondence, or at another university for transfer.

SATISFACTORY-UNSATISFACTORY GRADE OPTION: An undergraduate student in the School of Accounting may take on the S-U basis only those courses which will be counted as free electives in fulfilling the requirements for his degree.

PROBATION AND SUSPENSION: Students who do not make satisfactory academic progress may be excluded from further registration.

GRADUATION REQUIREMENTS:

To receive the degree Bachelor of Science in Accounting a student must satisfactorily complete the following:

1. 96 quarter hours of lower division requirements.
2. An approved program in accounting.
3. Upper division core courses.
4. Elective requirements.

A minimum of 193 quarter hours is required for graduation. The waiving of any required course does not reduce the hours required for graduation. A student must maintain an overall average of 2.0 and a 2.0 average on all courses which count toward his or her upper-division degree requirements. A 2.0 average must also be maintained for all accounting courses.

DEAN'S LIST AND GRADUATION WITH HONORS OR HIGH HONORS:

A student who carries 14 hours per quarter with a grade point average of 3.5 will have his name placed on the Dean's list for that quarter.

To graduate *With Honors*, a student must make at least a 3.2 average on all course work accepted as Upper Division credit *and* all course work (except as noted below) attempted while registered in the Upper Division. To graduate *With High Honors*, a student must make at least a 3.6 average on all work accepted as Upper Division credit *and* all course work (except as noted below) attempted while registered in the Upper Division. In calculating requirements for graduating *With Honors* or *With High Honors*, the following policies are followed: the student must have completed at the University of Florida at least 60 quarter hours for Upper Division credit toward a degree in Accounting, transfer credits and S-U grade credits will be excluded; and credits for Lower Division courses taken while registered in the Upper Division will be excluded.

GRADUATE DEGREES AND ADMISSION TO GRADUATE WORK

Courses are offered in the School of Accounting leading to the degree of Master of Accounting. For requirements for these degrees and for admission to Graduate School, consult the *Graduate School Catalog*.

CURRICULUM

The upper division curriculum in Accounting requires 97 quarter credits.

UPPER DIVISION REQUIREMENTS

Required Nonaccounting Courses:

	Credits
QMB 3700 Quantitative Methods for Business and Economic Analysis	5
MAN 3010 Principles of Management	4
MAR 3023 Principles of Marketing	4
FIN 3403 Business Finance	4
COP 3120 Introduction to COBOL Programming	4
*ECO 3251 National Income Determination and Policy	5
*ECO 3100 Prices and Markets	3
BUL 4121 Business Law	5
ECO 3411 Economic and Business Statistics	4
Electives	31
	69

*Students in the five-year accounting program are required to take ECO 3101, ECO 4205 in lieu of ECO 3100 and ECO 3251.

Required Accounting Courses:

	Credits
ACC 3123 Financial Accounting 2	4
ACC 3143 Financial Accounting 3	4
ACC 3401 Cost and Management Accounting 1	4
ACC 3421 Cost and Management Accounting 2	4
ACC 4501 Income Tax Accounting	4
ACC 4602 Auditing Theory and Internal Control 1	4
ACC 4741 Information Systems for Management Planning and Control	4
Total	28

AGRICULTURAL AND EXTENSION EDUCATION

AGRICULTURAL ENGINEERING

(See College of Engineering)

AGRONOMY

ANIMAL SCIENCE

BOTANY

DAIRY SCIENCE

ENTOMOLOGY AND NEMATOLOGY

FOOD AND RESOURCE ECONOMICS

FOOD SCIENCE

SCHOOL OF FOREST RESOURCES AND CONSERVATION

FRUIT CROPS

MECHANIZED AGRICULTURE

MICROBIOLOGY AND CELL SCIENCE

ORNAMENTAL HORTICULTURE

PLANT PATHOLOGY

PLANT SCIENCES—GENERAL

POULTRY SCIENCE

SOIL SCIENCE

STATISTICS

VEGETABLE CROPS

VETERINARY SCIENCE

College of Agriculture

The aim of the College of Agriculture is to provide students with the best education possible for service in agricultural business, technology, and science.

The departments in the College are: Agricultural and Extension Education, Agricultural Engineering, Agronomy, Animal Science, Dairy Science, Entomology and Nematology, Food and Resource Economics, Food Science, Fruit Crops, Microbiology and Cell Science, Ornamental Horticulture, Plant Pathology, Poultry Science, Soil Science, Vegetable Crops, and Veterinary Science. Degree programs are available through the College of Agriculture in Botany and Statistics departments administered in the College of Arts and Sciences. The School of Forest Resources and Conservation is a specialized faculty within the College of Agriculture.

REQUIREMENTS FOR ADMISSIONS

The University of Florida and the College of Agriculture encourage applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this college.

University College Students: Any student in University College who has finalized his decision to study Agriculture may transfer to the College of Agriculture after completing one quarter in University College. to be eligible for admission students must have a minimum of a C average on all work completed and have demonstrated by selection of pre-professional courses their intent to pursue a program in agriculture.

Transfer Students: To be eligible for admission to the College of Agriculture, a transfer student must satisfy the minimum requirements for admission to an Upper Division College that are set forth in the ADMISSIONS Section of this catalog. Additionally, the applicant must satisfy the following specific requirements for consideration by the College of Agriculture: (1) Complete the courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the University College section of this catalog or their equivalent, and, (2) pass all required preprofessional courses with a minimum grade of C. The following conditions will serve as a guide in expediting transfer to the College of Agriculture in compliance with the above requirements. In the event enrollment quotas become necessary because of limited space or teaching resources, selection of those admitted will be on the basis of past academic performance.

A. Students attending four-year colleges, who wish to transfer after two years, should follow a program of general education and preprofessional courses similar to the Basic Curriculum for the Freshman and Sophomore years for students planning to enter the College of Agriculture as outlined in the University College section of this catalog.

B. Junior College students should:

1. Complete the two-year college parallel program at the junior college.

2. Satisfy the general education requirements established for the junior college.

3. Complete a program of chemistry through qualitative analysis and mathematics through college algebra and trigonometry.

4. Complete basic courses in biology or botany and zoology.

5. Complete a course in general economics.

6. Choose elective courses in fulfilling the required total hours in the college-parallel program from the areas of general education, basic science, and mathematics.

7. Avoid specialized professional courses. Professional courses can be taken to much better advantage after the student has acquired the appropriate background in general education and basic science courses.

BACHELOR OF SCIENCE IN AGRICULTURE BASIC CURRICULUM

In addition to the 96 credits required for entrance to the College of Agriculture, 96 credits must be earned in the College of Agriculture curriculum for a combined total of 192 credits required for the Bachelor of Science in Agriculture degree. The following curriculum common to all areas of agriculture designates specific requirements and electives for the degree Bachelor of Science in Agriculture. Some of these courses may be taken as electives in the lower division. It is especially important that students in junior colleges, planning to transfer to the College of Agriculture, select courses from the core requirements as electives.

Curriculum — College of Agriculture — 96
Core Requirements — 8 Credits

Courses	Credits
Communications	8
Electives—selected from SPC 2300, ENG 3343, 3351, 4356, and AGG 4603	

Other Requirements and Electives—88 Credits

Requirements and electives in student's major department	min. 20—max. 40
Other requirements, free and approved electives	48-68

PRACTICAL WORK EXPERIENCE

By prior arrangement with individual Department Chairmen and approval of the Dean, students may, during their upper division course of study, receive credit for practical work under competent supervision in any recognized and approved agricultural or related pursuit relevant to their college program. Credit is normally earned at the rate of one credit per month of full-time work and may not exceed a total of four in any combination of experiences. A formal written report must be submitted before a grade (S-U) will be issued.

Departments offering this option have listed the course number 400 in their catalog listing of courses. Guidelines are available from the College and individual departments, establishing minimum criteria for credit eligibility and performance.

DEAN'S LIST AND GRADUATION WITH HONORS OR HIGH HONORS

A student who carries 15 hours per quarter with a grade point average of 3.3 or better and no grade less than C in any course will have his name placed on the Dean's list for that quarter.

Students completing the requirements for the B.S. in Agriculture degree are eligible to be considered for graduation with Honors or HIgh Honors.

To graduate with Honors a student must have a University of Florida Upper Division grade point average of 3.5, or above. (For purposes of honors the University of Florida Upper Division courses are defined as all courses taken at this University after the student has earned 96 credits, wherever taken.)

To graduate with High Honors the same requirements apply as for Honors except that the grade point average must be 3.75 or above.

GRADUATE TRAINING IN AGRICULTURE

The College of Agriculture offers five advanced degrees: Master of Agriculture, Master of Science in Teaching (non-thesis), Master of Science, Master of Agricultural Management and Resource Development, and Doctor of Philosophy.

Students contemplating graduate study should consult with their adviser as early as possible to insure proper program planning.

SPECIAL PROGRAMS

SCIENCE, TECHNOLOGY, AND BUSINESS

Students in agriculture may specialize in one of three broad areas of knowledge — Agricultural Science, Agricultural Technology, and Agricultural Business, all within the framework of 192 credits for the degree Bachelor of Science in Agriculture.

For a specialization in Agricultural Science at least 18 credits of the 192 total are required in one or more of the areas of the Physical (CHM, GPY, PHY) and Biological Sciences (APB, BOT, ENY, PLP, AGR 3303) and Mathematics (MAC), in addition to those required in the University College.

For a program in Agricultural Technology a choice of courses in applied agriculture is planned by the separate departments of the College of Agriculture in areas of the student's special interest.

For Agricultural Business Specialization at least 20 credits of the 192 total required must be completed from the areas of Food and Resource Economics (AEB) and Business Administration (ACC, ECO, FIN, MAN, MAR), in addition to those required in the University College plus a departmental major.

The chairman of the department in which the student majors (or his appointee) will act as the student's adviser, assist the student in arranging his course of study, and make necessary recommendations to the Dean. The student's courses for each quarter are subject to the approval of the Dean and the Department Chairman.

TROPICAL AGRICULTURE

A program for a specialization (with certificate) in Tropical Agriculture for undergraduate and graduate students in the College of Agriculture is available. The program provides course selection to broaden the normal degree requirements for those interested in specializing in Tropical Agriculture. Students enrolled in any one of the existing major programs in the College of Agriculture may pursue this specialization.

The Certificate in Tropical Agriculture specialization will include courses from four basic groups as follows: Area Studies, International Economics, Tropical Ecosystems, and Tropical Agriculture. A total of at least 20 quarter credits from courses which relate to non-U.S. tropical areas of the world is required from Area Studies, International Economics and Tropical Ecosystems with at least 4 credits from each category. In addition, a minimum of 20 credits from Tropical Agriculture courses related to production of agricultural commodities in tropical areas of the world is required.

The courses required for this specialization will be determined by the student in consultation with a departmental adviser from an approved list of courses as indicated in the Tropical Agriculture Specialization guidelines. In most cases the requirements may be met through a wise choice of electives. Students interested in this specialization should consult their departmental adviser.

A certificate program for non-agriculture students desiring to broaden their major program with courses relating to Tropical Studies with an emphasis in Agriculture is also available.

The Certificate in Tropical Studies will require 20 quarter credits in courses from the three basic groups: Area Studies, International Economics, and Tropical Ecosystems and a minimum of 15 credits from Tropical Agriculture courses.

The courses required for this Certificate will be determined by the student in consultation with a departmental adviser and approved by the Dean of the College of Agriculture. Students interested in this program should consult the Dean of Agriculture.

The departments or disciplines from which courses may be selected are listed below. The specific courses as well as all details of the program are given in a Tropical Agriculture Specialization guideline statement to be used by departmental advisers.

Area Studies
Anthropology
Education
Geography
History
Journalism
Latin American Studies
Law
Political Science
Sociology
Others as appropriate

International Economics
Economics
Food and Resource Economics
Marketing
Others as appropriate

Tropical Ecosystems
Agronomy
Biological Sciences
Botany
Forestry
Zoology
Others as appropriate

Tropical Agriculture
Agricultural Engineering
Agronomy
Animal Science
Entomology
Food and Resource Economics
Fruit Crops
Ornamental Horticulture
Plant Pathology
Soil Science
Vegetable Crops
Veterinary Science
Others as appropriate

PEST MANAGEMENT AND PLANT PROTECTION

Students in the Pest Management and Plant Protection Specialization will receive instruction in the principles of Entomology, Nematology, Plant Pathology, and Weed Science. An understanding of the component parts of the crop-plant ecosystem as related to management of all groups of pests through the application of biological, chemical, and integrated systems compatible with a quality environment will be provided.

Students who select the Pest Management and Plant Protection Specialization will major in one of the following programs in the College of Agriculture: Agronomy, Entomology and Nematology, Fruit Crops, Ornamental Horticulture, Plant Pathology, Plant Sciences, or Vegetable Crops. Students who complete the requirements for the Bachelor of Science degree with this specialization should find many employment opportunities in agri-business enterprises or government agencies concerned with plant pest management, crop production, and environmental protection. Moreover, the successful completion of this undergraduate program will place the student in an excellent competitive position as a candidate for graduate studies in any one of the departments cooperating in the undergraduate major program at the University of Florida or any other university.

Interested students should contact an academic adviser and should complete the following required courses in addition to the major program requirements. The requirements of this specialization can usually be met through the course requirements of the major program and a wise choice of electives within the 192 credits required for the Bachelor of Science in Agriculture.

	Credits
PMA 3010 Fundamentals of Plant-Pest Management	3
PMA 3931 Seminar in Basic Plant-Pest Management	2
PMA 3941 Internship in Plant-Pest Management	3
PMA 4401 Systems of Pest Management and Plant Protection	3
PMA 4402L Laboratory Exercises in Pest Management	2
PLS 2031 Fundamentals of Crop Production	4
ENY 3005 Principles of Entomology	3
ENY 3006L Principles of Entomology Laboratory	2
ENY 3701 Principles of Nematology	4
PLS 4601 Weed Science	4
PLP 3002 Lectures in Basic Plant Pathology	2
PCB 3033 Introduction to Ecology	5
BOT 3503C Elementary Plant Physiology	4
BOT 3503L Elementary Plant Physiology Laboratory	2
BCH 3023 Elementary Organic and Biological Chemistry	5
SOS 3022 General Soils	5
AGR 3033 Genetics	4

CERTIFICATE MINOR IN ENVIRONMENTAL STUDIES

A program for a minor (with certificate) in environmental studies has been developed. The program provides course selection to obtain a broad knowledge of the environment, especially the inter-relationships between the activities of man and environmental quality. Students enrolled in one of the existing major programs in the College of Agriculture and for this minor will learn to apply their major discipline to the solution of environmental problems.

The environmental studies minor will include environmental courses in three basic groups as follows: biological sciences, physical sciences, and social sciences. At least one course from each of these three groups is required. A minimum of 18 quarter hours credit is required for the minor. Courses required for the major cannot be counted toward the minor requirement. A minimum of three hours outside the College of Agriculture is required.

The courses required for this minor will be determined by the students in consultation with their departmental adviser from an approved list of courses prepared by the department, the College of Agriculture and the University. In most cases these requirements may be met through a wise choice of electives. Students interested in this minor should consult their departmental adviser.

PRE-VETERINARY MEDICINE

The College of Veterinary Medicine, University of Florida, admits a limited number of students each fall for the pursuit of a degree Doctor of Veterinary Medicine. The following courses must be completed with no grade less than C and a minimum grade point average of 2.5:

	Quarter Credits
Principles of Animal Biology, lecture and laboratory (ZOO 2010, ZOO 2011)	9
Microbiology (MCB 3013-3013L)	5
Genetics (AGR 3303 or PCB 3060)	4-5
Chemistry:	27
Inorganic Chemistry (General and Qual.); lecture and laboratory (CHM 2040, 2041C, CHM 2042 and CHM 2043; CHM 2045C, CHM 2046, CHM 2047C)	12-16
Organic Chemistry; lecture and laboratory (CHM 3210, 3210L; CHM 3211-3211L)	10
Quantitative Analysis (CHM 3120)	5
Physics (PHY 2050, PHY 2051, PHY 2050L, PHY 2051L)	10
Mathematics: Calculus* (MAC 3311)	5
Animal Science:	
Introduction to Animal Science (ASG 3003)	5
Feeds and Feeding (ASG 3403-3404)	5
Humanities (HUM 2210; HUM 2230; HUM 2250, 2410 or 2420	12**
Social Science (SSI 2110, SSI 2120, 2122, 2121, 3127, SSI 2221, 2201, or SS 3227)	9
English (ENG 1102; Comprehensive English; ENG 1200; ENG 1400 or ENG 1710	9
Electives	20-23
(e.g., Agriculture, Computer Science, Economics, Humanities, Journalism, Political Science, Psychology, Social Sciences, Statistics, etc.)	
Total	120

*Trigonometry and Algebra at the high school or college level are required for admission to courses in Calculus.

**Nine quarter credits will be accepted if taken as a requirement for an Associate of Arts degree.

Because of the rigid course requirements, most students require somewhat more than two years to complete this curriculum. Also, since admission to Veterinary School is competitive, students usually need to make considerably more than the minimum grade point average of 2.75.

Pre-veterinary students should consult the Dean of the College of Agriculture before registering for the pre-veterinary curriculum.

Residents of Florida who will have completed the pre-veterinary requirements in June of the year that entrance into the School of Veterinary Medicine is desired in the Fall, and who wish to be included in the State's list of eligibles, should contact the Dean of the College of Veterinary Medicine.

AGRICULTURAL ENGINEERING

BACHELOR OF SCIENCE IN ENGINEERING (Agricultural Engineering)

The Agricultural Engineering curriculum is offered cooperatively by the College of Agriculture and the College of Engineering. Students in this major receive basic training in engineering and agriculture so that they are prepared to solve the specialized and unique engineering problems of agricultural production and processing systems and the management and conservation of agricultural land and water resources. Since engineering problems in agriculture relate to biological production and processing of biological products, training in agricultural and biological courses is obtained. Students desiring careers in Agricultural Engineering will register in the College of Engineering. See College of Engineering for curriculum.

AGRICULTURAL AND EXTENSION EDUCATION

The Agricultural and Extension Education curriculum is designed to prepare students for careers in agricultural education and the cooperative extension service. Students majoring in this department have a common core curriculum which combines courses in technical agriculture, professional education, and/or extension methodology. The department chairman or one of the departmental counselors will advise students majoring in this department in the selection of electives and requirements to meet the students' career goals.

The student completing this program will be required to satisfy the College of Agriculture core curriculum requirements.

College of Agriculture Core Requirements - 8 credits *Departmental Requirements - 46 credits*	Credits
*AEE 3323 Development and Philosophy of Agricultural Education	4
*AEE 3200 Instructional Techniques in Agricultural Education	4
*AEE 4504 Organization of Agricultural Education Programs	4
*AEE 4224 Special Methods in Teaching Vocational Agriculture	4
*AEE 4227 Laboratory Practices in Teaching Agricultural Education	4
*AEE 4942 Agricultural and Extension Education Practicum	2-16
AEE 4943 Agricultural Extension Practicum	2-16
*EDF 3135 The Adolescent (or equivalent)	5
AEE 4624 Agricultural and Vocational Career Education	4
AEE 3313 Development and Role of Extension Education	4
AEE 4424 Agricultural Youth Programs	4

AEE 4906 Individual Work in Agricultural and Extension Education 1-8

Other Requirements and Electives - 42 credits••

	Credits
MAG 3220 Agricultural Mechanics I	4
MAG 4225 Agricultural Mechanics II	5
AEB 3103 Principles of Food & Resource Economics	5
ASG 3003 Introduction to Animal Science	5
PLS 2031 Fundamentals of Crop Production	4
SOS 3022 General Soils	5
ENY 3005 Principles of Entomology	3
ENY 3006 Principles of Entomology Laboratory	2
•••Electives in Agriculture	9

•The student planning to qualify to teach in the public schools will complete a minimum of 46 quarter hours from the above list of professional courses. The courses indicated by an asterisk (•) are required.

••Substitutions must be approved by the Chairman of Agricultural and Extension Education.

•••To be planned by department counselor.

AGRONOMY

(See Plant Sciences)

ANIMAL SCIENCE

The curriculum in Animal Science meets the educational requirements for the Bachelor of Science degree. Animal Science is designed to give students a foundation in the basic sciences and fundamental training in the various phases of the beef cattle, swine, horse, sheep and meat industries. Early in their college planning, students should discuss the programs and their implications with the Department Chairman or his counseling representatives.

	Credits
College of Agriculture Communications Requirements	8
Departmental Requirements	27
Other Requirements and Electives	61
Total	96

Departmental Requirements

ASN 3007 Principles of Livestock Production	4
ASG 3113 Principles of Animal Breeding	5
ASG 3403 Principles of Animal Nutrition	3
ASG 3404 Applied Animal Nutrition	2
ASN 4634 Meats	4
ASG 4931 Seminar	1

Minimum of 8 additional Department Credits selected from the following courses:

ANS 4234 Horse Enterprise Management	4
ANS 4244 Beef Cattle Enterprise Management	5
ANS 4264 Swine Production	3
ANS 4274 Sheep Production	2
ANS 4614 Livestock and Carcass Evaluation	3

Other Requirements and Electives

AEB 3133 Farm Firm Management	5
AGR 3303 Genetics	5
AGR 4231 Forage and Pasture Science	5
BCH 3023 Elementary Organic and Biological Chemistry	5
MCB 3013 Basic Biology of Microorganisms	3
MCB 3013L Microorganisms Laboratory	2
SOS 3022 General Soils	5
VES 3202C Anatomy and Physiology	5
Free Electives	26

Students are encouraged to elect additional courses in Science, Technology, Economics and Business relating to a career interest.

BOTANY

A major in botany is offered through the College of Agriculture. Students should consult with the Undergraduate Coordinator for curriculum. (See Botany, College of Arts and Sciences for course listing.)

DAIRY SCIENCE

The two curricula give broad foundations in science and technology of the dairy industry. Students should consult with the chairman or departmental counselor for assistance in choosing the curriculum and selecting electives.

CURRICULUM I—DAIRY SCIENCE

The curriculum is designed for students interested in dairy production, pre-veterinary medicine or post-graduate study.

College of Agriculture Core Requirements — 8 Credits

Electives — Selected from AGG 4603, ENC 3343, ENC 3351, ENC 4356 and SPC 2300

Science Core Requirements — 50 Credits

	Credits
AEB 3133 Farm Firm Management	5
AGR 3303 Genetics	5
AGR 4231 Forage and Pasture Science	5
ASG 3003 Introduction to Animal Sciences	5
ASG 3313 Principles of Animal Breeding	5
ASG 3403 Principles of Animal Nutrition	3
ASG 3404 Applied Animal Nutrition	2
ASG 4931 Seminar	1
BCH 3023 Elementary Organic and Biological Chemistry	5
MCB 3013 Basic Microbiology of Microorganisms	3
MCB 3013L Basic Microbiology of Microorganisms Laboratory	2
SOS 3022 General Soils	5
VES 3202 Anatomy and Physiology of Domestic Animals	5

Departmental Requirements — 18 Credits

	Credits
ASG 4334 Reproduction in Farm Animals or DAS 4510 Physiology of Lactation	4
DAS 3211 Dairy Cattle Management	4
DAS 4411 Dairy Cattle Nutrition	3
Electives in Dairy Science	7
Approved Electives	20

CURRICULUM II—DAIRY MANAGEMENT

The curriculum is designed for students interested in managing dairies or dairy enterprises, or careers in allied agribusinesses.

College of Agriculture Core Requirements — 8 Credits

Electives — Selected from AGG 4603. EC 3343, ENC 3351, ENC 4356 and SPC 2300

Management Core Requirements — 55 Credits

	Credits
ACC 2001 Elementary Financial Accounting	5
ACC 2301 Elementary Managerial Accounting	3
AEB 3111 Computers and Linear Programming for Agriculture	3
AEB 3133 Farm Firm Management	5
AGR 3303 Genetics	4
AGR 4231 Forage and Pasture Science	5
ASG 3003 Introduction to Animal Sciences	5
ASG 3403 Principles of Animal Nutrition	3
ASG 3404 Applied Animal Nutrition	2
BCH 3023 Elementary Organic and Biological Chemistry	5
MAC 2233 Calculus for Economics and Business or MAC 3311 Analytic Geometry and Calculus I	5
SOS 3022 General Soils	5
VES 3202 Anatomy and Physiology of Domestic Animals	5

Departmental Requirement — 18 Credits

	Credits
ASG 4334 Reproduction in Farm Animals or DAS 4510 Physiology of Lactation	4
DAS 3211 Dairy Cattle Management	4
DAS 4411 Dairy Cattle Nutrition	3
Electives in Dairy Science	7
Approved Electives	15

ENTOMOLOGY & NEMATOLOGY

Entomology and nematology are biological sciences dealing with two principal groups of Invertebrate animals. The curricula are designed to give basic training in

entomology and nematology and specialized programs in various areas of these two sciences.

College of Agriculture Core Requirements — 8 credits
Departmental Requirements — 30 Credits

	Credits
ENY 3005 Principles of Entomology	3
ENY 3006 Principles of Entomology Laboratory	2
or	
ENY 3004 General Entomology	4
ENY 4353 Insect Physiology and Morphology	5
ENY 4201 Insect Ecology, Behavior, and Systematics	5
ENY 4161 Insect Identification	5
ENY Electives	10 or 11

Other Requirements and Electives—58 Credits

BCH 3023 Organic & Biochemistry or equivalent	5
Electives in Agriculture and/or Biological Sciences	32
Suggested Courses: AGR 3303, ZOO 3203	
Approved Electives	21

For the Pest Management and Plant Protection Specialization, students must consult the department chairman for approved courses.

FOOD AND RESOURCE ECONOMICS

Six curricula are offered by the Department of Food and Resource Economics. The curriculum selected by the student will depend upon the nature of his interest in the field. Students should consult the chairman of the department or the departmental counselor for guidance in making their choice of a curriculum and for approval of electives.

CURRICULUM I — FOOD AND RESOURCE ECONOMICS

This curriculum is designed for those students interested primarily in training as professional agricultural economists or in preparing for graduate study.

College of Agriculture Core Requirements—8 Credits
Departmental Requirements—31 Credits

	Credits
AEB 3103 Principles of Food and Resource Economics	5
AEB 3133 Farm Firm Management	5
AEB 3300 Marketing	5
AEB 3934 Food and Resource Economics Junior Seminar	1
AEB 4224 Public Policy in Agric.	4
AEB 4334 Agric. Price Analysis and Consumer Behavior	4
AEB 4511 Quantitative Analysis in Food and Resource Economics	4
AEB 4935 Food and Resource Economics Senior Seminar	1
Electives in Food and Resource Economics	2

Other Requirements and Electives—57 Credits

ECO 2013 Basic Economics	5
ECO 4101 Microeconomic Theory	5
ECO 4205 Macroeconomic Theory	4
MAC 3311 Analytical Geometry and Calculus I	5
MAC 3312 Analytical Geometry and Calculus II	5
STA 3023 Introduction to Statistics	4
STA 4222 Sample Survey Design	3
Free and Approved Electives	26

CURRICULUM II — AGRICULTURAL BUSINESS MANAGEMENT

This curriculum is designed for those students interested in administrative and service aspects of agriculture or related businesses. Students who elect this curriculum and later decide to do graduate study will be required to take without credit toward a graduate degree courses required under Curriculum I that they have not taken under Curriculum II.

College of Agriculture Core Requirements—8 Credits
Departmental Requirements—35 Credits

	Credits
AEB 3103 Principles of Food and Resource Economics	5
AEB 3133 Farm Firm Management	5
AEB 3300 Marketing	5
AEB 3934 Food and Resource Economics Junior Seminar	1
AEB 4224 Public Policy in Agriculture	4
AEB 4334 Agric. Price Analysis & Consumer Behavior	4
AEB 4511 Quantitative Analysis in Food and Resource Economics	4
AEB 4935 Food and Resource Economics Senior Seminar	1
*Quantitative Methods	3-4
Electives in Food and Resource Economics	2 or 3

Other Requirements and Electives — 53 Credits

ACC 2001 & ACC 2301 Elementary Accounting	8
BUL 4121 or AEB 3123 Business Law or Agric. Law	4-5
ECO 2013 Basic Economics	5
ECO 3100 or ECO 4101 Microeconomic Theory	3-5
ECO 3251 or ECO 4250 Macroeconomic Theory	4-5
MAC 2233 or MAC 3311 Calculus	5
STA 3023 Introduction to Statistics	4
Free and Approved Electives	17-19

*This requirement can be satisfied with AEB 4172, QMB 4701, or STA 4222.

CURRICULUM III — CO-MAJOR WITH OTHER DEPARTMENTS

Students majoring in other departments who feel the need for a better understanding of the economics of agriculture and the relationship of agriculture to the general economy can also take a Co-Major in Food and Resource Economics. The curriculum for such Co-Major includes 25 quarter hours of required courses in Food and Resource Economics, 9 quarter hours in related fields, and 62 hours to meet the requirements of other participating departments and for electives. Elective courses will be selected to fit the needs and interests of the student.

College of Agriculture Core Requirements—8 Credits*
Departmental Requirements—25 Credits

	Credits
AEB 3103 Principles of Food and Resource Economics	5
AEB 3133 Farm Firm Management	5
AEB 3300 Marketing	5
AEB 3934 Food and Resource Economics Junior Seminar	1
AEB 4224 Public Policy in Agriculture	4
AEB 4334 Agric. Price Analysis & Consumer Behavior	4
AEB 4935 Food and Resource Economics Senior Seminar	1

Other Requirements and Electives—63 Credits

ECO 2013 Basic Economics	5
STA 3033 Introduction to Statistics	4
Free and Approved Electives	54

*Students taking a Co-Major in Food and Resource Economics meet the curriculum core requirements of the College of Agriculture. Such students will have 62 instead of 54 hours of free and approved electives.

CURRICULUM IV — RURAL COMMUNITY AND REGIONAL ECONOMICS

This curriculum is designed to train professionals to work on problems affecting people and their communities. Students will be trained to deal with the identification and solution of such problems as inadequate housing, inefficient or nonexistent public transportation, substandard education and technical training, limited job opportunities, poor recreation facilities, and improper and inefficient land use and human resource development.

College of Agriculture Core Requirements—8 Credits
Department Requirements—29 Credits

	Credits
AEB 3103 Principles of Food and Resource Economics	5
AEB 3413 Economics of Environmental Quality	4
AEB 3934 Food and Resource Economics Junior Seminar	1
AEB 4434 Land and Water Economics	4
AEB 4444 Regional Economics and Policy Analysis	5
AEB 4511 Quantitative Analysis in Food and Resource Economics	4
AEB 4726 Income and Employment of Rural People	5
AEB 4935 Food and Resource Economics Senior Seminar	1

Other Requirements and Electives—59 Credits

ECO 2013 Basic Economics 5
ECO 3100 or 4101 Microeconomic Theory 3-5
ECO 3251 or 4205 Macroeconomic Theory 4-5
ECO 4504 Public Finance 4
ECP 4602 Urban Economics 5
MAC 2233 or MAC 3311 Calculus 5
SOC 2000 Principles of Sociology 4
STA 3023 Introduction to Statistics 4
*Free and Approved Electives 23-25

*Suggested electives include: AEB 3133, AEB 4172, AEB 4224, AEB 4905, AMH 4460, DHE 4200, EGN 4822, ENV 3003, GEO 3502, GEO 3602, MAG 3503, PAD 4003, POS 2112, PUP 4104, REE 3042, REE 4434, REE 4704, SOC 3300, SOC 3310, SOS 3003, SOS 3215, STA 4222.

CURRICULUM V — FOOD MARKFTING AND DISTRIBUTION

This curriculum is designed for students interested in employment at the managerial level in the Food Industry.

College of Agriculture Core Requirements—8 Credits
Departmental Requirements—32 Credits

	Credits
AEB 3103 Principles of Food and Resource Economics	5
AEB 3300 Marketing	5
AEB 3934 Food and Resource Economics Junior Seminar	1
AEB 4172 Basic Activity Analysis for Econ. Decisions	4
AEB 4314 Terminal Markets	2
AEB 4334 Agric. Price Analysis and Consumer Behavior	4
AEB 4343 Food Wholesaling	3
AEB 4344 Food Retailing	3
AEB 4511 Quantitative Analysis in Food and Resource Economics	4
AEB 4935 Food and Resource Economics Senior Seminar	1

Other Requirements and Electives—56 Credits

ACC 2001 & ACC 2301 Elementary Accounting	8
BUL 3121 Business Law	5
ECO 2013 Basic Economics	5
ECO 3100 or ECO 4101 Microeconomic Theory	3-5
ECO 3250 or ECO 4205 Macroeconomic Theory	4-5
MAC 2233 or MAC 3311 Calculus	5
STA 3023 Introduction to Statistics	4
Free and Approved Electives	20-21

CURRICULUM VI — NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS

This curriculum is designed for students interested in natural resources and environmental quality. This field includes the study of the ownership, utilization, development, management, and conservation of natural resources. Emphasis is on economic problems and decision making relating to these areas.

College of Agriculture Core Requirements—8 Credits
Department Requirements—33 Credits

	Credits
AEB 3103 Principles of Food and Resource Economics	5
AEB 3133 Farm Firm Management	5
AEB 3413 Economics of Environmental Quality	4
AEB 3934 Food and Resource Economics Junior Seminar	1
AEB 4224 Public Policy in Agriculture	4
AEB 4434 Land and Water Economics	4
AEB 4444 Regional Economics and Policy Analysis	5
AEB 4511 Quantitative Analysis in Food and Resource Economics	4
AEB 4935 Food and Resource Economics Senior Seminar	1

Other Requirements and Electives—55 Credits

ECO 2013 Basic Economics	5
ECO 3100 or ECO 4101 Microeconomic Theory	3-5
ECO 3251 or ECO 4205 Macroeconomic Theory	4
MAC 2233 or MAC 3311 Calculus	5
STA 3023 Introduction to Statistics	4
*Free and Approved Electives	32-33

*At least 18 quarter hours of electives must be chosen from the following courses as required to qualify for the College of Agriculture Certificate Minor in Environmental Studies: AEB 3123, AEB 3300, AEB 4172, AEB 4334, AEB 4726, ECH 3782, ECO 4504, ECP 3423, ECP 4403, ECP 4602, EES 3008, ENV 3003, ENY 3005, FOR 2010, FOR 4030, FOR 4612, MAG 3503, MAG 3732, OCE 4016, REE 3042, REE 4434, SOS 3022, SOS 3215, WIS 3200, WIS 3401.

FOOD SCIENCE AND HUMAN NUTRITION

The Department of Food Science and Human Nutrition offers three curricula, Food Science, Food and Consumer Protection, and Nutrition and Dietetics. These curricula are designed to provide an understanding of the applications of basic sciences, engineering and management to the handling, processing, manufacturing, marketing and utilization of human foods and the effects of these functions upon our environment. Wholesomeness, nutritive value, safety, convenience and availability of foods are stressed, with further emphasis on ecological and environmental effects. Students in all curricula take a common core of courses, required courses for their area of concentration, and electives.

The Food Science curriculum offers ample opportunity for electing courses in areas of special interest, such as food processing and manufacturing, management or sales; and graduate study and research in Food Science or related fields. For those wishing to specialize in the manufacture, handling and evaluation of products of dairy, fruit, meat, poultry and vegetable origin, an opportunity is available for cooperative programs with the commodity departments. Students interested in the environmental aspects of food and life systems should choose the Food and Consumer Protection curriculum. This curriculum will prepare students for employment in the areas of food regulation, quality control, and environmental control. The Nutrition and Dietetics curriculum is designed to prepare students for a general dietetics internship program upon graduation. Students should consult the departmental counselors for guidance and approval of electives.

College of Agriculture Core Requirements — 8
Department Core Requirements — 38 Credits

	Credits
HUN 2201 Fundamentals of Human Nutrition	4
FOS 3042 Introductory Food Science	4
FOS 4311C Food Chemistry	5
FOS 4222C Food Microbiology	5
FOS 4321C Food Analysis	5
CHM 3200-3200L Organic Chemistry	6
MCB 3013-3013L Basic Biology of Microorganisms	5
STA 3023 Introduction to Statistics	4

CURRICULUM I — BASIC FOOD SCIENCE

Additional requirements and electives — 50 Credits

	Credits
MAC 4062C Principles of Food Engineering	5
FOS 4731 Government Regulations and the Food Industry	2
FOS 4722C Statistical Quality Control and Sensory Evaluation of Foods	3
FOS 4931 Food Science and Human Nutrition Seminar	1
FOS 4427C Principles of Food Processing	5
MAC 3311 Analytical Geometry & Calculus	5
Electives (including one commodity-oriented processing course)	29

CURRICULUM II—FOOD AND CONSUMER PROTECTION

Additional requirements and electives — 50 Credits

	Credits
FOS 4731 Government Regulations and the Food Industry	2
FOS 4722C Statistical Quality Control and Sensory Evaluation of Foods	3
VES 4611C Environmental Toxicology and Public Health	4
FOS 4931 Food Science and Human Nutrition Seminar	1
FOS 4252 Food Epidemiology	4
FOS 4427C Principles of Food Processing	5
ENY 3005 Principles of Entomology	4
MAC 3311 Analytical Geometry & Calculus	5

Electives 22

NOTE: Recommended Electives for Curriculum II—AGG 2501—Agriculture in the Environment; FOS 2003—Toxic Substances in Foods; ENY 4660—Medical and Veterinary Entomology; BUL 4101—Business Law; PCB 4040—General Ecology; EES 4401—Public Health Engineering.

CURRICULUM III—NUTRITION AND DIETETICS

Additional requirements and electives—50 Credits

	Credits
HUN 3221 Introduction to Human Nutrition	4
HUN 4241 Human Nutrition	4
DIE 4244 Nutrition and Disease	4
DIE 4125 Food Systems Management	4
FOS 4931 Food Science and Human Nutrition Seminar	1
BCH 3713 Introduction to Human Biochemistry	3
EDF 4210 Educational Psychology	5
APB 3223 Basic Anatomy & Physiology	4
MAN 3010 Principles of Management	4
MAN 3301 Personnel Management	4
PSY 2013 General Psychology	4
SOC 2000 Principles of Sociology	4
Electives	5

FOREST RESOURCES AND CONSERVATION

(For Bachelor of Science Degree Requirements, See Listings Under School of Forest Resources and Conservation.)

FRUIT CROPS

(See Plant Sciences)

MECHANIZED AGRICULTURE

The objective of this curriculum is to prepare the graduate for a career in one of four general areas: (1) operations manager in production agriculture, (2) sales and service representation for organizations which service the agribusiness industry, (3) assistant agricultural extension agents, (4) specialists with insurance companies, banks, agricultural organizations and governmental agencies. The curriculum is structured to encourage concentration in one of the career areas. Concentration is achieved through wise selection of electives. Electives which support one of the four career objectives are selected in consultation with the Agricultural Engineering Department academic advisor. Graduates from this program are well prepared for careers in the agribusiness industry where the management of mechanized production operations is involved.

College of Agriculture Core Requirements—8 Credits

	Credits
ENC 4356 Report Writing	4
SPC 3601 Public Speaking	4

Mechanized Agriculture Requirements—88 Credits

•MAC 2223 Analytic Geometry and Calculus	5
•PHY 2005 Applied Physics	5
AEB 3103 Principles of Food and Resource Economics	5
ENY 3005 Principles of Entomology	3
ENY 3531 Animal Insects	2
•PSY 2013 General Psychology	4
Animal Science Requirement	4
Plant Science Requirement	8
MAN 3010 Principles of Management	4
•ACC 2001 Elementary Financial Accounting	5
MAR 3023 Principles of Marketing	4
MAG 3732 Water Management	4
MAG 3220 Agricultural Mechanics I	4
MAG 3312 Farm Machinery	4
MAG 4642 Environmental Systems for Agricultural Structures	4
MAG 4062 Principles of Food Engineering	5
MAG 3503 Agricultural and Environmental Quality	4
••Approved Electives	14

•These required courses should be taken as electives within the first 96 credits.

••The curriculum, 192 credit hours, contains 33 elective credits. A minimum of 20 elective credits specifically selected, in consultation with the Departmental advisor, to support the student's career objective is required.

MICROBIOLOGY AND CELL SCIENCE

The curriculum is designed to develop fundamental knowledge of bacteria, plant and animal cells, and viruses. It provides a background for pursuing graduate work in microbiology, cell biology, or biochemistry as well as other areas of agricultural sciences. It also provides a background necessary for work in research or diagnostic laboratories, both governmental and industrial. The curriculum also provides a background for entry into the professions of dentistry, medicine and veterinary medicine.

College of Agriculture Core Requirements — 8 Credits

Departmental Requirements — 36 Credits

	Credits
BCH 4313 Introduction to Physical Biochemistry	5
MCB 3013 Basic Biology of Microorganisms	3
MCB 3013L Basic Biology of Microorganisms Laboratory	2
PCB 3136 Cell Structure and Function	5
MCB Electives	21
(BCH 4203 may count toward the 21 credits)	

Other Requirements and Electives — 52 Credits

	Credits
CHM 3120 Quantitative Analysis	5
CHM 3210 Organic Chemistry	4
CHM 3210L Organic Chemistry Laboratory	1
CHM 3211 Organic Chemistry	3
CHM 3211L Organic Chemistry Laboratory	2
Electives	37

ORNAMENTAL HORTICULTURE

(See Plant Sciences)

PLANT PATHOLOGY

The curriculum in Plant Pathology permits students to learn the principles of Plant Pathology and their applications to scientific agriculture. The following program is offered for a major in Plant Pathology with specialization in either Agricultural Science or Agricultural Technology. Students must consult the catalog statement for courses approved for the Specialization in Pest Management and Plant Protection.

College of Agriculture Core Requirements — 8 Credits

Departmental Requirements — 20 Credits

	Credits
PLP 3002 Lectures in Basic Plant Pathology	2
PLP 3003L Laboratory in Basic Plant Pathology	3
PLP 4102 Principles of Plant Disease Control	4
PLP 4931 Seminar in Plant Pathology	1 to 2
•BOT 5435C Introductory Mycology	5
ENY 3701 Principles of Nematology	4
MCB 3013 Basic Biology of Microorganisms	3
MCB 3013L Basic Biology of Microorganisms Laboratory	2
PLP 4906 Problems in Intermediate Plant Pathology	1 to 5

Other Requirements — 35 Credits

	Credits
AGR 3303 Genetics	4
BOT 2021 General Botany	5
BOT 3503C Elementary Plant Physiology	4
BOT 3503L Elementary Plant Physiology Laboratory	2
BCH 3023 Elementary Organic and Biological Chemistry	5
ENY 3005 Principles of Entomology	3

ENY 3006L Principles of Entomology Laboratory 2
PLS 3221 Plant Propagation 3
PLS 3221L Plant Propagation Laboratory 2
SOS 3022C General Soils 5

Approved Electives — 33 Credits

*Departmental electives.

PLANT SCIENCES

(Agronomy, Fruit Crops, Ornamental Horticulture, Vegetable Crops, Plant Science)

Students in the Plant Sciences have the option of majoring in Agronomy, Fruit Crops, Ornamental Horticulture, Vegetable Crops or the broad area of Plant Science. Curricula in each of the four departments and Plant Science include common College of Agriculture and Plant Sciences core requirements, departmental requirements and approved electives totalling 96 credits. Students should consult a counselor in their respective major department as early as possible for program planning; students electing a Plant Science curriculum rather than a departmental major should consult the Department of Agronomy.

College of Agriculture Core Requirements — 8 Credits
Plant Sciences Core Requirements — 40 Credits

	Credits
AGR 3303 Genetics	5
BOT 3023 Elementary Organic and Biological Chemistry	5
BOT 3503C Elementary Plant Physiology	4
BOT 3503L Elementary Plant Physiology Laboratory	2
ENY 3005 Principles of Entomology	3
ENY 3006L Principles of Entomology Laboratory	2
PLP 3002 Basic Plant Pathology	2
PLP 3003L Laboratory in Basic Plant Pathology	3
PLS 2031 Fundamentals of Crop Production	4
PLS 3221 Plant Propagation	3
PLS 3221L Plant Propagation Laboratory	2
SOS 3022C General Soils	5

AGRONOMY

Curricula in Agronomy provide a sound educational experience for students in Agronomic Science, Technology, Business, Pest Management for Plant Protection or General Agronomy. Detailed programs are available in crop production including field, forage, and pasture crops, as well as weed science, genetics, and plant breeding.

Departmental Requirements — 20 Credits

	Credits
AGR 3210 Field Crop Science	4
AGR 4321 Plant Breeding	4
AGR 4906 Problems in Agronomy	3
AGR 4931 Agronomy Seminar	1
Electives in Agronomy	8

Other Requirements — 7 or 8

PLS 4601 Weed Science 4
*PLS 4701 Field Plot Techniques 3
**STA 3023 Introduction to Statistics 4
Approved Electives (See specializations below) 20-21

Science Specialization (21 Credits):
BCH 4203-4313; CHM 3120-3210-3210L-3211-3211L; MAC 3312-3313-3314; MCB 3013-3013L; PHY 2050-2050L-2051-2051L; SOS 4115.

Technology Specialization (22 credits):
AEB 3313; ASG 3003-3403-3404; ENY 3701C; MAG 3312; SOS 4115; VES 3202C.

Business Specialization (22 credits):
ACC 2001; AEB 3300-3111-3133-4152; FIN 3033; MAN 3010; PSY 2013; SOS 4115.

Pest Management for Plant Protection Specialization (17 credits):
BOT 3033C; PMA 3010-3931-3941-4401-4933.

General Agronomy (22 credits):
AEB 3111-3123-3133; APB 2170-2170L; ASG 3403-3404; ENY 3701C; MAN 3010; PSY 2013; SOS 4115.

*Technology, Business, Pest Management for Plant Protection and General Agronomy Specializations.
**Science Specialization.

Each student has the prerogative of choosing approved electives from the respective group of courses listed above to meet the requirements of a specialization in Agronomic Science, Technology, or Business, Pest Management for Plant Protection and in General Agronomy.

FRUIT CROPS

Plant Sciences majors selecting an option in Fruit Crops receive a broad foundation in the science and technology of fruit production, handling and marketing, with emphasis on citrus and tropical fruits. Programs of study leading to specializations in technology, science and business are available.

Departmental Requirements — 22 Credits

	Credits
FRC 3212 Introduction to Citrus Culture	4
FRC 4223 Citrus Production	4
FRC 4224L Fruit Crops Laboratory I	2
FRC 4225L Fruit Crops Laboratory II	2
FRC 4411 Physiology of Fruit Production	5
FRC 4612 Citrus Maturity and Packinghouse Procedure	4
FRC 4931 Undergraduate Seminar in Fruit Crops	1
Approved Electives	26

Students choosing the Agricultural Technology Specialization must select appropriate electives in technical agriculture and related courses to give them the proper background for careers in fruit production.

Those choosing the Agricultural Science Specialization will select electives in mathematics, physics, chemistry, and biology as a background for graduate work and careers in research, teaching, and extension.

Students will select approved electives in the fields of business, economics and management for the Agricultural Business Specialization.

Students must consult the department chairman as to approved courses for the Pest Management and Plant Protection Specialization.

ORNAMENTAL HORTICULTURE

Plant Sciences majors selecting an option in Ornamental Horticulture receive scientific or technical training in the production of flower, foliage, nursery and turf crops.

Departmental Requirements — 27 Credits

	Credits
ORH 3513C Ornamental Plant Identification	4
ORH 4221 Turfgrass Culture	4
ORH 4251 Principles of Nursery Operations	3
ORH 4263 Production of Floricultural Crops	4
ORH 4411 Physiological Aspects of Ornamental Plant Production	4
ORH 4931 Ornamental Horticulture Seminar	1
Ornamental Horticulture Electives	7
Approved Electives	21

Emphasis on science, technology, or business training on the basis of student career interest is possible by proper selection of electives under supervision of the departmental counselor.

Ornamental Horticulture electives: (May also be used as approved electives)
Nursery Specialization:
ORH 3231, 3514C, 3516, 3534, 4232, 4242L, 4932, 4941.
Floriculture Specialization:
ORH 3514C, 3516, 3611, 4263L, 4264L, 4280, 4932, 4941.
Turf Specialization:
ORH 3231, 3514C, 3516, 3534, 4232, 4242L, 4413, 4932, 4941.
Landscape Horticulture Specialization:
ORH 3231, 3514C, 3516, 3534, 3731, 3815C, 4932, 4941.

Students must consult the department chairman as to approved courses for the Pest Management for Plant Protection Specialization.

VEGETABLE CROPS

The option in Vegetable Crops is designed to give students an adequate foundation of basic plant science which, together with specific courses in the principles of production and marketing of vegetables, will be prepare them for primary employment in any phase of the specialized vegetable industry.

Departmental Requirements — 21 Credits

	Credits
VEC 3224 Principles of Vegetable Production	3
VEC 4225 Commercial Cool Season Vegetable Crops	3
VEC 4226 Commercial Warm Season Vegetable Crops	4
VEC 4410 Vegetable Crops Nutrition	3
VEC 4432 Growth and Development of Vegetable Crops	4
VEC 4452 Principles of Postharvest Horticulture	4
Approved Electives	27

Elective hours, chosen with the advice of departmental counselors, enable students to study in an agricultural science or business specialization.

For the Pest Management for Plant Protection Specialization, students must consult the department chairman for approved courses.

PLANT SCIENCE

Students interested in majoring in the broad area of Plant Science rather than one of the four component departments receive an adequate foundation in both in the basic and applied plant sciences. Electives should be selected with the advice and approval of the assigned Plant Science counselor.

Plant Science Requirements — 40 Credits

	Credits
Approved electives in AGR, FRC, ORH, VEC	20
Other approved electives	28

POULTRY SCIENCE

Two curricula are offered by the Department of Poultry Science. Students should consult the Chairman or the departmental counselor for guidance in making their curriculum choice and for approval of electives.

CURRICULUM I—General or Science

This curriculum is designed for those students interested in training in poultry production, pre-veterinary medicine or in preparing for graduate study.

College of Agriculture Core Requirements — 8 Credits

Electives — Selected from AGG 4603, ENC 3343, ENC 3351, ENC 4356 and SPC 2300

Science Core Requirements — 41 Credits

	Credits
ACC 2001 Elementary Financial Accounting or AEB 3133 Farm Firm Management	5
AGR 3303 Genetics	5
ASG 3003 Introduction to Animal Sciences	5
ASG 3313 Principles of Animal Breeding	5
ASG 3403 Principles of Animal Nutrition	3
ASG 3404 Applied Animal Nutrition	2
ASG 4931 Seminar	1
BCH 3023 Elementary Organic and Biological Chemistry	5
MCB 3013 Basic Microbiology of Microorganisms	3
MCB 3013L Basic Microbiology of Microorganisms Laboratory	2
VES 3202 Anatomy and Physiology of Domestic Animals	5

Departmental minimum requirements — 15 credits

Students selecting this curriculum are required to take a minimum of 15 hours from the following Poultry Science and related courses:

	Credits
ASG 4992 Poultry Judging	1
PSE 3211C Incubation, Brooding and Rearing	4
PSE 4223 Poultry Management	4
PSE 4311 Poultry Breeding	3
PSE 4411 Poultry Nutrition	4
PSE 4611C Poultry Products Technology	4
PSE 4914 Problems in Poultry Science	1-4
PSE 4941 Full Time Practical Work Experience in the Poultry Industry	1-4
VES 4162 Poultry Diseases	3
Electives (Free and Approved)	32

CURRICULUM II—Management or Business

This curriculum is designed for those students who plan a career in any of various phases of the poultry or allied industries with major emphasis on the management or business aspect.

College of Agriculture Core Requirements — 8 Credits

Electives — Selected from AGG 4603, ENC 3343, ENC 3351, ENC 4356 and SPC 2300

Management Core Requirements — 45 Credits

	Credits
ACC 2001 Elementary Financial Accounting	5
ACC 2301 Elementary Managerial Accounting	3
AEB 3111 Computers and Linear Programming for Agriculture	3
AEB 3133 Farm Firm Management	5
AGR 3303 Genetics	4
ASG 3003 Introduction to Animal Sciences	5
ASG 3403 Principles of Animal Nutrition	3
ASG 3404 Applied Animal Nutrition	2
BCH 3023 Elementary Organic and Biological Chemistry	5
MAC 2233 Calculus for Economics and Business or MAC 3311 Analytic Geometry and Calculus I	5
VES 3202 Anatomy and Physiology of Domestic Animals	5

Departmental Requirements — 15 Credits

Students are required to take PSE 4223 (Poultry Management) and a minimum of 11 hours from the following Poultry Science and related courses:

	Credits
ASG 4992 Poultry Judging	1
PSE 3211C Incubation, Brooding and Rearing	4
PSE 4311 Poultry Breeding	3
PSE 4411 Poultry Nutrition	4
PSE 4611C Poultry Products Technology	4
PSE 4914 Problems in Poultry Science	1-4
PSE 4941 Full Time Practical Work Experience in the Poultry Industry	1-4
VES 4162 Poultry Diseases	3
Free Electives	11

Approved Electives — 17 Credits

Approved electives are to be taken from Poultry Science and related courses listed above or from the following courses: AEB 3141, AEB 3300, AEB 4172, AEB 4511, ANS 5446, ASG 3313, BUL 4121, MAN 3301, MCB 3013, MCB 3013L, and STA 3023.

SOIL SCIENCE

The Department of Soil Science offers three curricula (Soil Science, Soil Technology, and Soil Conservation and Land-Use Planning) and each of which is designed to meet the specific needs of the individual. Students should consult the chairman of the department or the departmental counselor for approval of electives in their field of specialization.

SOIL SCIENCE

This program of study emphasizes the basic sciences. Students following this curriculum can qualify for graduate study and research in Soil Fertility, Soil Chemistry, Soil Microbiology, Soil Physics, or Soil Genesis and Classification by a careful selection of elective courses.

Core Requirements in College of Agriculture — 8 Credits

Departmental Requirements — 22 Credits

	Credits
SOS 3022 General Soils	5
SOS 4404 Soil Chemistry	4
SOS 4303 Soil Microbiology	4
SOS 4715 Soil Genesis & Classification	4
SOS 4602 Soil Physics	4
Electives in Soil Science	1

*Other Requirements and Electives — 67 Credits**

	Credits
GLY 2015 Physical Geology	4
APB 2170 Microbiology	3
APB 2170L	2
BOT 3503 Elementary Plant Physiology	4
APB 2170L Microbiology Laboratory	2
BOT 3503 Elementary Plant Physiology	4
BOT 3503L Elementary Plant Physiology Laboratory	2
MAC 3311 Analytic Geometry and Calculus I	5
PHY 2050-2050L General Physics with Laboratory	5
PHY 2051-2051L General Physics with Laboratory	5
PHY 2052-2052L General Physics with Laboratory	5
CHM 2043 General Chemistry and Qualitative Analysis	4
CHM 3120 Quantitative Analysis	5
*Free and Approved Electives	23

*Suggested electives: CHM 3200-3200L, CHM 3400-3401 or CHM 4410-4411-4412, ENY 3005, ENY 3006, ENY 3701, GLY 4210, GLY 4200, GLY 4301, GEO 3200, MAC 3312, PLP 3002, PLP 3003, SOS 4115, SOS 4718, SOS 4732, SOS 4906.

SOIL TECHNOLOGY

This program of study is designed primarily for the student who desires employment in one of the many applied fields of agriculture after obtaining the bachelor's degree. By a careful selection of electives one may prepare for a career according to his or her specific interests.

Core Requirements in College Agriculture — 8 Credits
Departmental Requirements — 26 Credits

	Credits
SOS 3022 General Soils	5
SOS 4404 Soil Chemistry	4
SOS 4303 Soil Microbiology	4
SOS 4115 Fertilizers & Soil Fertility	4
Electives in Soil Science	9

Other Requirements and Electives — 63 Credits

	Credits
MAG 3732 Agricultural Water Management	4
AGR 4231 Forage and Pasture Science	5
FRC 3221 Citrus Growing	4
APB 2170 Microbiology	3
APB 2170L Microbiology Laboratory	2
ENY 3005 Principles of Entomology	3
ENY 3006L Principles of Entomology Laboratory	2
PLP 3002-3003L Lectures and Laboratory in Basic Plant Pathology	5
*Free and Approved Electives	34

*Suggested Electives: AEB 3133, ANS 3007, CHM 3120, ENC 3343, GEO 3200, GLY 2015, GLY 2100, PLS 2031, PLS 3221-3221L, SOS 4602, SOS 4715, SOS 4732.

SOIL CONSERVATION AND LAND-USE PLANNING

This curriculum is recommended for students desiring a fundamental knowledge of soils requisite to their conservation and the formulation of sound land-use decisions for a wide variety of purposes to meet the needs of our rapidly expanding population. These include agricultural, industrial, urban, and recreational developments. Employment opportunities exist with federal, state, and local governmental as well as private organizations involved in building and highway construction, land appraisal and assessment, land zoning, and other activities related to ecology and the environment, sanitation, and land-use capability.

Core Requirements in College of Agriculture — 8 Credits
Departmental Requirements — 24 Credits

	Credits
SOS 3022 General Soils	5
SOS 3215 Agricultural and Enivronmental Quality	4
SOS 4404 Soil Chemistry	4
SOS 4715 Soil Genesis and Classification	4
SOS 4732 Soil Survey	3
SOS 4718 Soils of Florida	3
Electives in Soil Science	1

Other Requirements and Electives — 64 Credits

	Credits
MAG 3732 Agricultural Water Management	4
GLY 2015 Physical Geology	4
GEO 3200 Physical Geography	5
PCB 3033 Introduction to Ecology	5
ENV 3033 Environmental Quality and Man	4
ORH 3534 Relationships of Ornamental Plants to Urban Environment	3
REE 4704 Urban Land Use Analysis	4
*Free and Approved Electives	35

*Suggested Electives: AGG 2501, AEB 3103, AEB 3123, AEB 3133, ANS 3007, ANT 2410, ANT 4304, BOT 3800, COC 3400, FOR 4612, FOS 2001, GEO 3370, GEO 3430, GLY 4155, MET 1010, PUP 3204, REE 3042, SOC 3310, SOC 3320, STA 3023, SOS 3003, SOS 4115, SOS 4303, SOS 4602.

STATISTICS

A major in Statistics is offered through the College of Agriculture. Students should consult with the Undergraduate Coordinator for curriculum. (See College of Arts and Sciences for requirements)

VEGETABLE CROPS

(See Plant Sciences)

ARCHITECTURE
BUILDING CONSTRUCTION
INTERIOR DESIGN
LANDSCAPE ARCHITECTURE

College of Architecture

GENERAL STATEMENT

The College of Architecture provides instruction for students who seek professional careers in the Building Arts. The College has developed from the School of Architecture established in 1925. Its organization now includes — the Department of Architecture and School of Building Construction; Programs in Interior Design, Landscape Architecture, and Urban and Regional Planning (Graduate); the Bureau of Research.

PROGRAMS

Professional Instruction — The College offers professional curricula leading to appropriate undergraduate degrees in:
Architecture (Preprofessional)
Building Construction
Interior Design
Landscape Architecture

The College also offers at the Graduate level professional programs in Architecture, Building Construction and Urban and Regional Planning. Each undergraduate and graduate program stresses thorough mastery of the principles underlying its field and the development of professional skills in their creative application to practice.

Bureau of Research: The Bureau fosters and encourages research in all areas of the building arts. It also provides an opportunity for graduate students and faculty members to engage in research and cooperate effectively in research with other University departments and with other institutions.

LIBRARY FACILITIES

The University Libraries and the Architecture and Fine Arts Library together provide an important working collection of publications and audio-visual materials for undergraduate and graduate studies. These resources include books, government documents, leading American and foreign periodicals, color prints, and slides.

COUNSELING

Students planning to major in any program of study in the College of Architecture should see the proper Upper Division departmental chairman, program director or adviser as soon as possible in their college program.

The counseling program of the College is designed to make available to all students the services of faculty members highly qualified in their respective professions who can assist in the selection of a field of study, give understanding and sympathetic counsel regarding the student's personal or academic problems, and advise on the selection of employment after graduation.

STUDENT AID

Students interested in part-time employment, assistantships, fellowships, loans, prizes, and awards are referred to individual departments and information provided by the Student Financial Aid Office, University of Florida, Gainesville, Florida.

PRACTICAL EXPERIENCE

Students are urged to obtain before graduation some experience in the employ of practicing professionals in their particular field, or in some allied work which will give an insight into the problems of professional practice. Such employment provides an introduction to the methods of actual practice, and enables the student to derive increased benefit from advanced work in school. Students should seek the counsel of their faculty adviser as to the type of practical experience best suited to their individual needs.

FIELD TRIPS

Each year a number of field trips are arranged to give students an opportunity to broaden and extend their educational experience through study of construction projects of unusual interest or of outstanding works of architecture. Students frequently combine such studies with attendance at state and national meetings of the professional organizations in their respective fields.

STUDENT WORK

The College reserves the right to retain student work for the purpose of record, exhibition, or instruction.

STUDENT ORGANIZATIONS

Student organizations take an active part in the educational program of the College. Included in these organizations are the student chapter of the American Institute of Constructors, the Gargoyle Society, Sigma Lambda Chi, the Students Contractors and Builders Association, the student chapter of the American Institute of Architects, and Tau Sigma Delta. The College encourages and assists students in promoting close relations with professional groups and societies.

GRADUATE DEGREES

The college offers the degrees of Master of Arts in Architecture, Master of Arts in Urban and Regional Planning, Master of Science in Building Construction, Master of Building Construction. To meet the needs and goals of each student, graduate programs are prepared in consultation with a designated member of the Graduate Faculty of the College of Architecture. For further information, see the *Graduate School catalog.*

Architecture: Those students with a Bachelor of Design (Architecture) degree who wish to obtain a professional degree in architecture must pursue the two year graduate program which is a prerequisite for seeking licensing for architectural practice. It permits further study in specialized areas of architectural design, architectural history, architectural structures, environmental technologies or architectural preservation.

Under special circumstances the graduate faculty of the department may elect to admit students who have a Bachelor of Architecture degree from a five-year program, for a one-year graduate program leading to the Master of Arts in Architecture.

Building Construction: A program focusing on managing construction. Areas of intensive study and research include construction management, advanced construction techniques, building systems, construction materials and structural concepts. Holders of a four-year undergraduate degree in Building Construction normally can complete the program in one academic year (3 quarters). Students with undergraduate degrees in related fields, such as Architecture and Engineering can normally complete the program in one year (four quarters).

The construction industry needs managers with a knowledge of business. To meet this need there is a special program for students with a four-year degree in Business Administration leading to a Master of Building Construction Degree in six quarters.

Urban and Regional Planning: The Department of Urban and Regional Planning offers a 72 credit hour graduate program leading to a Master of Arts in Urban and Regional Planning. Planners strive for integrated social, economic, and physical development of communities, urban or rural regions, and states. The planning program stresses analysis of

issues and problems in formalization of policies, plans, and implementing programs, for both public and private organizations. Policies and plans are used to direct or influence change—change which leads to development of resources, and development or redevelopment of communities. This program is particularly important as Florida and the South look to a future coping with rapid development and growth.

The southern region has spoken through regional growth policies and individual state legislation expressing the need for growth planning and management as an alternative to no-growth strategems. This program offers a unique location in Florida to provide a base for research and study in this dynamic southern region.

Students may begin this graduate program any quarter, including summer. Applicants are encouraged from such undergraduate programs as architecture, landscape architecture, engineering, social sciences, and other fields. Minorities are encouraged to apply, for as planners they will have a vital role in understanding and solving the urban problems of city dwellers. Those finishing the program will be prepared to enter the planning profession and take the membership examination of the American Institute of Planners.

For more information, see the *Graduate School* catalog, or contact the program office in 211 Flint Hall, (904) 392-0997.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Architecture encourage applications from qualified students from all cultural, racial, religious and ethnic groups. Listed below are the specific requirements for admission to this College. It should be understood, however, that minimum requirements are given and that admission to the College is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. Limitations in staff, faculty and facilities make it necessary that the College establish quotas for the admission of students. Therefore, eligible applicants will be considered for admission to the College of Architecture within established quotas. A student's total record, including educational objective, pattern or courses previously completed, quality of previous academic record, and test data will be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential, on the basis of their total record, indicates the greatest likelihood of success in the program requested.

University College Students: To be eligible for admission to the College of Architecture, a University College student must have: 1) earned at least 92-99 quarter hours (varies with curricula) with the minimum average of "C" or higher in the courses required by the appropriate curriculum specified for the Freshman and Sophomore years; and 2) passed all required preprofessional courses within those two years with a minimum grade average of "C". Admission to programs restricting enrollment because of space limitations may require that the student earn higher than the 2.0 (C) average minimum. Quotas will limit the admission of students based upon the overall academic record, grade point average and apparent potential for successful completion of the program.

Minimum grades required in certain courses and other special requirements for admission to various curricula in the College of Architecture should be obtained from the Dean's Office or from the departmental adviser.

Transfer Students: To be eligible for admission to the College of Architecture a transfer student must satisfy the minimum requirements for admission as specified in the ADMISSIONS section of this catalog. Additionally, the applicant must satisfy the following specific requirements for admission to the College of Architecture:

A. Transfers from four-year colleges.

Students attending four-year colleges should take courses similar to the appropriate program as outlined in this catalog.

B. Community College Transfers to Departments within the College.

1. *Curricula in Architecture:* Transfer students from community colleges not having approved pre-architecture programs should expect to take up to three quarters of work at the University of Florida to complete the preprofessional courses not available at the community college. Mathematics, including calculus, and one year of physics with laboratory, should be taken at the community college if available. In addition, courses in free-hand drawing, and perspective drawing with instruments are recommended.

2. *Curriculum in Interior Design:* Same as 1. above except calculus and physics are not required. If available, economics or accounting, free-hand drawing and trigonometry should be taken at the community college.

3. *Curriculum in Landscape Architecture:* Transfer students should expect to take a minimum of three quarters to complete preprofessional courses not available at the community college. Mathematics including calculus, introductory botany and general botany should be taken at the community college. This physical science requirement may be fulfilled by one term of physical science and one term of general physics (see program as listed in the University College section of the catalog).

4. *Curriculum in Building Construction:* Transfer students, in addition to obtaining an Associate of Arts degree and completing general education requirements, should satisfactorily complete the following at the junior or community college: mathematics, including calculus through basic integration; one year of physics with laboratory; one course each in accounting, business communications or technical report writing, and drawing with instruments such as architectural or engineering drawing.

The three remaining Freshman and Sophomore preprofessional courses, one each in physical geology, construction materials, and statics should be taken at the junior or community college if available. If not available they must be satisfactorily completed in the first term of registration at the University of Florida before the student can proceed to the Junior level courses.

Each Florida junior and community college has been furnished a copy of a suggested pre-Building Construction program listing those local courses which satisfy Freshman and Sophomore prerequisite requirements for the University of Florida program. Any student may write the Department of Building Construction for a copy.

Provisional Admission: The professional programs of the College demand that preprofessional course-work begin with the Freshman year. Realizing that most of the schools from which transfer students come do not offer all such courses, the College provides an opportunity for admissable students to remove these deficiencies. Qualified transfer students, indicating potential, but not having completed all preprofessional prerequisites, may be admitted provisionally *based upon space available.* Due to limitations in space and faculty all qualified students may not be admissable. Students admitted provisionally will register for the courses necessary to eliminate deficiencies in the shortest time possible. Until these deficiencies are removed students will be required to maintain a "C" (2.00) average to be eligible for continued registration and may be prevented from registering for courses numbered 300 or above.

MAXIMUM AND MINIMUM LOADS

Fifteen to eighteen quarter hours in any regular quarter shall be considered a *normal* load. A student may be

permitted to register for more than eighteen quarter hours when, in the opinion of his adviser, the quality of his record justifies this. The *minimum load* for a full-time student in the University during a regular quarter is 12 hours. At the time of registration a student, with the approval of the Dean, may register for less than twelve quarter hours. If a student wishes to drop courses during the quarter, he must have the approval of the College Committee on Student Petitions.

NORMAL ACADEMIC PROGRESS

The student will have maintained normal academic progress when he earns a minimum grade point of 2.0 (C) average for all work attempted in the Upper Division. In addition, he is required to take courses in a sequence as specified by his departmental chairman or adviser. The student may be excluded from a program of study in the College of Architecture if he fails or refuses to maintain normal academic progress.

DEAN'S HONOR LIST

Undergraduate students who demonstrate excellence in their academic work by completing a full course load (minimum of 12 quarter hours credit) in a quarter term and achieving a grade point average of 3.5 or better will earn a position on the Dean's Honor List. Students whose term averages are below 3.5 due to grades of I or X are not eligible.

GRADUATION REQUIREMENTS

To be eligible for graduation, the student must earn a minimum grade point average of 2.0 (C) for all work attempted in the appropriate curriculum while classified in the College. Courses taken while enrolled in another Upper Division College may not apply toward the calculation of the College of Architecture average. Specific grade requirements for the various curricula may be obtained from the department or Dean's Office.

Students planning to enter the Graduate School should maintain a 3.0 (B) average in Upper Division work.

GRADUATION WITH HONORS AND HIGH HONORS

The faculty will consider recommending students for graduation with HONORS or HIGH HONORS on the following criteria: (a) grade point average, (b) distribution and quality of subject matter studied, (c) evaluation of the students by the faculty, and (d) other pertinent qualities of the student and his work.

The student will be considered for HONORS or HIGH HONORS upon his earning a minimum academic average established by his department or program. The average will be calculated on all work attempted while the student is classified in the Upper Division. Transfer credits will be excluded from the average; HONORS or HIGH HONORS may be awarded upon a minimum of 72 quarter hour credits taken at the University of Florida. Students should check with their department or program director for minimum average required.

I. CURRICULUM IN ARCHITECTURE

Leading to the Degree of Bachelor of Design (Architecture)
Butt, A. F., *Chairman.*

This curriculum is for students who desire to obtain a preprofessional education in architecture. It is the undergraduate preparation for the two-year graduate program for those interested in professional practice, teaching, and similar careers of creative and intellectual activity. For other careers in architecture the course of study leading to the Bachelor of Design is a terminal program.

Students participate in a 2-year program of general education in architecture. Also in consultation with departmental counselors the student selects electives which will strengthen and reinforce individual interests and objectives. Elective study permits the student to begin a background for the 2-year professional graduate program.

In the graduate program optional courses of study are architectural design, architectural structures, architectural environmental technologies, architectural history and architectural preservation. For details of the graduate professional program see the *Graduate catalog.*

The undergraduate and graduate programs form a curriculum of study accredited by the National Architectural Accrediting Board.

The program of study is included below to show a typical sequence in which courses are taken. In the first and second years, courses are offered frequently in quarters in addition to those shown. First-quarter courses for the third year are offered only in the fall or spring quarters, with subsequent courses offered in the appropriate quarters to maintain the desired sequences. Admission into the third year is determined by the Department Selection Committee.

The Department reserves the right to retain student work for the purposes of record, exhibition, or instruction.

FIRST YEAR	*Credits*
MAC 2223 Analytic Geometry/Calculus	5
PSC 2501 Physical Sciences	4
ARC 1115C Basic Drawing	4
ARC 1211 Building Arts	3
	16
BES Behavioral Studies	4
PHY 2004C Applied Physics I	5
English	3
ARC 1126C Architectural Drawing	4
	16
PHY 2005C Applied Physics II	5
English	3
ARC 1131C Architectural Communications	4
HUM Humanities	4
Physical Education	1
	17

SECOND YEAR	*Credits*
HUM Humanities	4
English	3
SSC Social Sciences	3
ARC 2311C Architectural Design I	4
Physical Education	1
	15
CBS Biological Sciences	3
HUM Humanities	4
SSC Social Sciences	3
ARC 2313C Architectural Design II	4
Physical Education	1
	15
CBS Biological Sciences	3

THIRD YEAR	*Credits*
ARC 3381C Architectural Design 3	6
ARC 3581C Architectural Structures 2	4
ARC 3681C Environmental Technology 1	4
	14
ARC 3382C Architectural Design 4	6
ARC 3631C Environmental Technology 2	4
ARC 3711 Survey of Architectural History 1	4
	14

ARC 3383C Architectural Design 5 6
ARC 3551C Architectural Structures 3 4
ARC 3463C Materials & Methods of Construction 2 4
14

FOURTH YEAR *Credits*
ARC 4384C Architectural Design 6 6
ARC 4682C Environmental Technology 3 4
ARC 4731 Survey of Architectural History 2 4
14

ARC 4385C Architectural Design 7 6
ARC 4464C Materials & Methods of Construction 3 4
ARC 4561C Architectural Structures 4 4
14

ARC 4386C Architectural Design 8 6
ARC 4274 Prof. Ad., Specs., & Estimating 4
ARC 4741 Survey of Architectural History 3 4
14

Electives (Total for 3rd & 4th Years) 12

Total 96

II. CURRICULUM IN INTERIOR DESIGN

Leading to the degree of Bachelor of Design. MacFarlane, J., *Program Director, Adviser.*

This curriculum is for students who desire to become professional interior designers in the domestic, commercial, and institutional fields, or who desire to engage in the design, and manufacture of furniture and accessories.

For Freshman and Sophomore programs of study consult section of catalog entitled Lower Division.

The Department reserves the right to retain student work for the purposes of record, exhibition, or instruction.

Students must begin the third year program during the Fall Quarter only.

FIRST YEAR *Credits*
ARC 1211 The Building Arts 3
SSI Social Sciences 3
PSC Physical Sciences 4
ENG English 3
PSC Physical Education 2
15

ARC 1115 Basic Drawing 4
SSI Social Sciences 3
PSC Physical Sciences 3
ENG English 3
MAF Behavioral Studies 3
16

ARC 1126 Architectural Drawing 4
SSI Social Sciences 3
PSC Physical Sciences 3
ENG English 3
MAF Behavioral Studies 3
16

SECOND YEAR *Credits*
HUM Humanities 4
MAC Algebra and Trigonometry 5
ARC 1131 Architectural Communications 4
ELECT Electives 4
17

HUM Humanities 4
BSC Biological Sciences 3
ACC Accounting 5
ARC 2311 Architectural Design 1 5
16

HUM Humanities 4
BSC Biological Sciences 3
ARC 2313 Architectural Design 4
ELECT Elective 5
16

THIRD YEAR *Credits*
IND 3215 Interior Design 1 5
IND 3420 Interior Furnishings 1 4
IND 3311 Interior Architectural Drawing 4
ARC 2641 Mat. & Methods of Construction 1 4
17

IND 3216 Interior Design 2 5
IND 3421 Interior Furnishings 2 4
IND 3100 History 1 4
ARC 3463 Mat. & Methods of Construction 2 4
17

IND 3217 Interior Design 3 5
IND 3430 Interior Furnishings 3 4
IND 3130 History 2 4
IND 3422 Textiles 4
17

FOURTH YEAR *Credits*
IND 4222 Advanced Interior Design 1 8
IND 4406 Applied Design Connections 4
ELECT Elective 4
16

IND 4223 Advanced Interior Design 2 8
IND 4500 Practice of Interior Design 4
ELECT Elective 4
16

IND 4226 Advanced Interior Design 3 8
BUL Business Law 5
ELECT Elective 3
16

III. CURRICULUM IN LANDSCAPE ARCHITECTURE

Leading to the Degree of Bachelor of Landscape Architecture H. H. Smith, *Program Director and Adviser*

This four-year curriculum is designed for those students who seek an undergraduate professional education in Landscape Architecture. Leading to the degree, Bachelor of Landscape Architecture, the program is accredited by the American Society of Landscape Architects, and is an essential first step toward legal identity in those states which regulate the practice of landscape architects. Since Florida is one of these states, entering students are embarked on a professional career where discipline and ethical commitment are construed as being in the best interests of public health, safety and welfare.

The program is based on the core knowledge of landscape architecture which is enhanced through subsequent professional practice. Students become familiar with the art of design, planning or management, and the arrangement of natural and man-made elements on the land through application of cultural and scientific knowledge. There is concern for resource conservation and stewardship to the end that the resultant enviornment serves useful and enjoyable purposes. Graduates are largely employed by professional offices and municipal, state or federal recreation, landscape architectural or planning agencies. Many graduates also continue in graduate programs at other institutions throughout the country.

Since landscape architecture is a quota program, please see Requirements for Admission, College of Architecture.

Preprofessional Program

FIRST YEAR	*Credits*
ARC 1211 Building Arts	3
ARC 1115C Basic Drawing	4
BSC 2010C Organismic Biology	4
MAC 2223 Anal. Geom./Calc.	5
	16
ARC 1126C Architectural Drawing	4
BOT 2710C Pract. Plant Taxonomy	3
ENG English	3
PSC 2501 Physical Sciences	4
PEM Physical Education	2
	16
ARC 1131C Architectural Communication	4
ENG English	3
**PSC Physical Sciences	3
SOC 2000 Principles Sociology	4
COP 3110 Intro. Computer Program	2
	16
	49

SECOND YEAR	*Credits*
LAA 2710 History of Landscape Architecture 1	4
ARC 2311C Architectural Design 1	4
*Humanities	4
ENG English	3
**PSC Physical Sciences	3
	18
LAA 2711 History of Landscape Architecture 2	4
ARC 2313C Architectural Design 2	4
*Humanities	4
SSI Social Sciences	3
	15
ARC 2461 Mat/Method Construction 1	4
ARC 2500 Architectural Structures 1	4
*Humanities	4
SSI Social Sciences	3
	15
	48
	48+48
(minimum)	96

*Integrative Studies in Architecture may be substituted for one HUM.

**PHY 2004C may be substituted for PSC 2452 and 2401.

Professional Program

THIRD YEAR	*Credits*
LAA 3350L Landscape Architectural Design 1	5
LAA 3420 Landscape Construction 1	4
LAA 3330C Site Analysis	4
ORH 3513C Fund. Orn. Plant Class.	4
	17
LAA 3351L Landscape Architectural Design 2	5
LAA 3421 Landscape Construction 2	4
ORH 3514C Ident. Basic Ornamental Plants	4
Elective	4
	17
LAA 3352L Landscape Architectural Design 3	5
LAA 3510 Planting Design	5
LAA 3530 Grounds Maintenance (or Elective)	4
Elective	4
	18
	52

FOURTH YEAR	*Credits*
LAA 4355L Advanced Landscape Architectural Design 1	8
LAA 4830 Recreation Planning	4
Elective	4
	16
LAA 4356L Advanced Landscape Architectural Design 2	8
LAA 4210 Professional Administration	5
Elective	4
	17
LAA 4357L Advanced Landscape Architectural Design 3	8
LAA 4930 Senior Seminar	3
Elective	4
	15
	48
	52+48
	100

*A field trip is required of all Junior and/or Senior level students. 24 credit hours of upper division elective hours are required. Students may elect the Minor Certificate Program in Environmental Studies.

IV. CURRICULUM IN BUILDING CONSTRUCTION

Leading to the degree of Bachelor of Building Construction, Halperin, D.A., *Chairman;* Johnson, L.A., Tracey, V.G. and Grim, D., Jr., *Advisers.*

This four-year program is for students who are interested in preparing for professional careers in construction science, management, techniques, operations, products research, and related areas in the construction industry rather than in architectural and engineering design. Graduate programs leading to the degrees of Master of Science in Building Construction and Master of Building Construction are offered, see Graduate catalog.

The Freshman and Sophomore program of study (see section of catalog entitled Lower Division) is designed to provide easy transfer for junior and community college Associate of Arts graduates. Equivalent transfer courses in these first two years are available at many junior and community colleges. Thus, with proper course planning many transfer students with A.A. degrees may complete the four-year degree program in six or seven remaining quarters at the University. Prospective junior and community college transfer students should consult their advisers or write to the Department of Building Construction for a pre-building construction program of local study.

The construction industry and its related fields are in dire need of young men and women educated in the arts of communications and interpersonal relations and in areas of construction science, management, techniques, and operations. This curriculum provides education in all these areas.

Students are especially attracted to construction because of the creative excitement, the challenging and rewarding opportunities offered and the sense of tangible accomplishments. Opportunities for advancement and increasing responsibilities are unlimited in all areas of the industry, a few of which include land development; home building; public building; industrialized building and systems; commercial, industrial, marine, and heavy construction; underwater and space age facilities; materials and equipment distribution sales, and installations; construction product research, development, sales, and applications. Typical company titles of jobs accepted by graduating Seniors are: assistant project manager, field engineer, project planner, cost engineer, project scheduler, and cost analyst.

The department includes a chapter of Sigma Lambda Chi, National Honorary Construction Fraternity, a student chapter of the American Institute of Constructors, and the Student Contractors and Builders Association. This association is an affiliated student chapter of the National Association of Home Builders and also of the Associated General Contractors of America.

For the Freshman and Sophomore program of study, consult the section of the catalog entitled Lower Division.

JUNIOR YEAR

1st Quarter	*Credits*
BCN 3256 Construction Drawing	2
BCN 3401 Construction Mechanics 2	5
BCN 3223 Construction Techniques 1	5
BCN 3281 Techniques Laboratory	3
2nd Quarter	
BCN 3431 Structures 1	4
BCN 3224 Construction Techniques 2	5
BUL 4121 Business Law	5
3rd Quarter	
COP 3110 Introduction to Computer Programming	2
BCN 3461 Structures 2	4
BCN 3225 Construction Techniques 3	5
BCN 3611 Quantity Surveying	4
Total	44

SENIOR YEAR

1st Quarter	*Credits*
BCN 4462 Structures 3	4
BCN 4612 Construction Estimating	4
BCN 4500 Environmental Technology 1	4
BCN 4700 Construction Management 1	4
2nd Quarter	
BCN 4012 History of Construction	4
BCN 4521 Environmental Technology 2	4
BCN 4750 Construction Management 2	4
BCN 4720 Construction Planning & Control	4
3rd Quarter	
BCN 4751 Site Development	4
BCN 4510 Environmental Technology 3	4
BCN 4710 Construction Management 3	4
Elective	4
Total	48

The College of Arts and Sciences

AMERICAN STUDIES
ANTHROPOLOGY
ART
ARTS AND SCIENCES — GENERAL
ASIAN STUDIES
ASTRONOMY
ATMOSPHERIC SCIENCES
BIOCHEMISTRY
BIOLOGICAL SCIENCES
BOTANY
CHEMISTRY
CHINESE
CLASSICS
COMPUTER AND INFORMATION SCIENCES
CRIMINAL JUSTICE
ECONOMICS
ENGLISH
GEOGRAPHY
GEOLOGY
GERMANIC AND SLAVIC LANGUAGES
HEBREW
HISTORY
INDIVIDUAL INTERDISCIPLINARY STUDIES
JAPANESE
LATIN AMERICAN STUDIES
LINGUISTICS
MATHEMATICS
MICROBIOLOGY AND CELL SCIENCE
MUSIC
PHILOSOPHY
PHYSICS
POLITICAL SCIENCE
PSYCHOLOGY
RELIGION
ROMANCE LANGUAGES
SOCIOLOGY
SPEECH
STATISTICS
SWAHILI
THEATRE
ZOOLOGY

The College of Arts and Sciences

GENERAL STATEMENT

Culturally and historically the programs of the College of Arts and Sciences represent the core of all higher education. The humanities, the social sciences, the natural and biological sciences — all are studied in the College and all contribute to the richness of its program.

The major aim of the College is to impart the ideas, concepts, motivations, and skills of a liberal education to its students to enable them to assume leadership positions in society. Intellectual inquiry, the intelligent evaluation of ideas, an appreciation of the dominant thought patterns of the world are the tools the College insists that its graduates possess. Upon these fundamentals they can build personally rewarding lives and careers. They will also be prepared to pursue a field to its frontier through further study in the graduate and professional colleges.

The College grants the traditional Bachelor of Arts and Bachelor of Science degrees.

SUBJECT-MATTER FIELDS

The subject-matter fields regularly offered to students in the College of Arts and Sciences and the extent of these offerings are indicated in the table below:

Subject	Major	Masters	Ph.D.	Electives
American Studies	X	—	—	X
Anthropology	X	X	X	X
Art	X			X
(Graduate work offered through College of Fine Arts.)				
Asian Studies	X	—	—	X
Astronomy	—	X	X	X
Atmospheric Sciences	—	—	—	X
Biochemistry	—	X	X	X
Biology**	X	—	—	X
Botany	X	X	X	X
(Degrees also offered through College of Agriculture.)				
Chemistry	X	X	X	X
Chinese	—	—	—	X
Classics	X	—	—	X
Computer and Information Sciences	X	—	—	X
Criminal Justice	X	—	—	X
Economics	X			X
(Graduate work offered through College of Business Administration.)				
English	X	X	X	X
French	X	X	X	X
Geography	X	X	X	X
Geology	X	X	—	X
German	X	X	—	X
Greek	—	—	—	X
Hebrew	—	—	—	X
History	X	X	X	X
Individual/Interdisciplinary Studies	X	—	—	—
Italian	—	—	—	X
Journalism	—	—	—	X
(Major and Graduate work offered through College of Journalism and Communications.)				
Latin	—	X	—	X
Latin American Studies	—	X	—	X
Linguistics	—	X	X	X
Mathematics	X	X	X	X
Microbiology and Cell Science	X	X	X	X
(Degrees also offered through College of Agriculture.)				
Music*	X	—	—	X
Philosophy	X	X	X	X
Physics	X	X	X	X
Polish	—	—	—	X
Political Science	X	X	X	X
Portuguese	—	—	—	X
Psychology	X	X	X	X
Religion	X	—	—	X
Russian	X	—	—	X
Sociology	X	X	X	X
Spanish	X	X	X	X
Speech	X	X	X	X
Statistics	X	X	X	X
Swahili	—	—	—	X
Theatre	X	—	—	X
(Graduate work offered through College of Fine Arts and Department of Speech.)				
Zoology	X	X	X	X

*Except for music majors, a maximum of 9 hours of credit in ensemble music may be included in the minimum of 186 hours required for the degree.

**Interdepartmental Major in Biology. Available for those working toward the Teacher Certification only. For Teacher Certification program see College of Education section of the catalog.

UNIVERSITY COLLEGE PROGRAM

University College students who plan to enter the College of Arts and Sciences should consult the basic distribution requirement section below (Section A under Requirements for Degrees.) After a student has completed 96 hours in University College, only those courses and equivalents listed are accepted as satisfying the general education requirements for graduation from the College of Arts and Sciences. University College may have different or additional requirements to obtain an Associate of Arts degree.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Arts and Sciences encourage applications of qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this college. It should be understood however that minimum requirements are given and that admission to this college is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objective, pattern of courses previously completed, quality of previous academic record, and test data will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested.

University College Students: Admission to the College of Arts and Sciences is normally approved if the student has earned at least 96 quarter hours of acceptable college credit with an overall average of 2.0 or higher on all college level work attempted. As a rule the student will have completed all lower division courses as indicated in the program for the Freshman and Sophomore years in the University College section of this catalog, and will have passed all required preprofessional courses within the lower division curriculum with a minimum grade of 2.0 in each course.

However, the College welcomes applications of all students who have not yet completed this portion of their

academic program but who have an overall average of 3.0 or higher after one or more quarters in University College, and who have clearly defined academic objectives. Students entering under early admission may satisfy the basic distribution coursework by taking courses indicated below in Section A, Basic Distribution Requirements, under "Requirements for Degree", or by taking courses in University College. In the latter case, the student must (a) take such courses before completing 96 hours and (b) consult an advisor in the College of Arts and Sciences office.

Florida Scholars Program: Each year gifted and unusual students will be admitted after eleventh grade to a special program offered by University College and the College of Arts and Sciences. See the ADMISSIONS section of this catalog.

Transfer Students: To be eligible for admission to the College of Arts and Sciences, a transfer student must satisfy the minimum requirements for admission to an Upper Division College that are set forth in the ADMISSIONS Section of this catalog.

A. Students attending four year colleges, who wish to transfer after two years, should follow a program of general education and preprofessional courses as outlined in the Basic Distribution Requirements (see below Section A, under Requirements for Degree).

B. Junior and Community College transfer students should:

1. Complete a university transfer program at the lower division College.

2. Indicate an intended major field of concentration, using the exact terminology as on the list of majors at the beginning of the Arts and Sciences section of this catalog.

3. If pre-medical, pre-optometry, pre-dental, or pre-veterinary, or students who plan to major in mathematics, biological or physical sciences: be certain to substitute subject-matter courses in mathematics, botany, zoology, chemistry, or physics for survey courses in those areas. See Medicine, Dentistry and Optometry programs in the University College section of this catalog.

4. Attempt to satisfy the foreign language requirement of the College prior to transfer. Fifteen quarter hours of a single foreign language with grades of "C" or better, including course work at the intermediate level, will meet this requirement if two (2) courses in the same language are taken at the intermediate level. For further advisement see below, Section B of "Requirements for Degree".

5. Complete sequential courses prior to transfer, especially the foreign language sequence (see item 4 above). Some courses are cumulative and represent a direct continuation of work done in a previous course. It is difficult to guarantee complete articulation of such courses when they are offered in different institutions.

6. Choose general education courses to satisfy the basic distribution requirement (See Section A, under Requirements for Degrees), and choose a variety of elective courses as needed to complete 96 quarter hours of credit. (Vocational-technical courses will not count as transfer credit.)

7. Earn a grade of 2.0 or better in each course attempted. No course in which a grade of less than 2.0 has been earned may be used to satisfy any basic or major requirements in the College of Arts and Sciences.

8. Wait until after transfer to the University to take courses in professional education if the student expects to work toward certification to teach.

Special post-baccalaureate student (6AS): A student who has received a baccalaureate degree but who is not seeking admisison to the Graduate School may, under certain conditions, be admitted as a special student (6AS). The applicant must meet deadlines printed in the University Calendar. The College will seek the approval of the appropriate academic officer: the chairperson of the department specified by the student, the graduate coordinator of the department, or the Director of Preprofessional Education. Such approval must be granted for admission. Students making application for admission under this category are advised that they must declare a specific major field of study.

Graduate student: The general section of this catalog dealing with admission describes certain minimum requirements for admission of graduate students to the University. Additional details for admission are given in the Graduate School catalog.

ADVISEMENT

Upon admission to the College of Arts and Sciences, the student should contact the office of Student Academic Affairs of the College for referral to a departmental academic adviser. The College policy is self advisement. The faculty member's role is only to give advice. The student assumes the responsibility for fulfilling college and departmental degree requirements. A computer printout of the student's academic record will be furnished for use during Advanced Registration each term. These printouts, available in the departmental office of the student's designated major, assist the student in following the College policy of self-advisement. Printouts are reliable only if the student has designated a major precisely according to the wording of the list of major fields at the start of the Arts and Sciences section of this catalog. (A computer program cannot be written for Interdisciplinary majors, or for students in American Studies, Asian Studies, Classics, or Criminal Justice. Such students should regularly consult their departmental advisers.) The student is responsible for informing the keypunch operator in the Arts and Sciences office of corrections to the printout.

Students are urged to review the information presented in the Arts and Sciences section of the catalog each quarter when planning their programs. Failure to read, understand, and follow the guidelines presented here could cause significant hardship and delays in their academic progress. Clarification of college requirements is available at the College of Arts and Sciences office: students should ask to see the Peer Advisors provided by the College of Arts and Sciences Student Council and by the Dean's Office in 2008 General Purpose A Building.

Preprofessional Counseling: Preprofessional students seeking advisement should contact the Office of Preprofessional Education. For a detailed description of core requirements and career options, see PREMEDICAL, PREDENTAL, PREOPTOMETRY, AND PRELAW PROGRAMS in the University College section of this catalog.

GENERAL REGULATIONS

Student Responsibility: Students must assume full responsibility for registering for the proper courses and loads and for fulfilling all degree requirements. Students are responsible for completing all courses for which they are registered at the end of the drop/add period.

Maximum, Minimum and Normal Loads: The normal course load in this College is 15 credit hours, and all students are expected to carry a normal load. Loads which are either lighter or heavier than normal must be justified and approved by the student's academic adviser. Loads in excess of the College maximum of 19 hours or below the University minimum of 12 hours for a full-time student require approval of the Dean as well as the student's adviser.

Adding/Dropping/Withdrawing: Courses may be added any time during the drop/add period if this does not increase one's registration to more than 19 hours. Courses may be dropped during the drop/add period without penalty as long as this does not lower one's registration below 12 hours (See Maximum, Minimum and Normal Loads above). After the drop/add period, a course may be dropped up to the date established as the College deadline. All drops are subject to the following restrictions:

(1) No more than three (3) such drops, after the University's drop/add period, will be permitted in the student's upper division career.
(2) After the deadline students may petition to drop a course provided they can document sufficient reasons to drop, usually hardship or medical.

(3) The course load will not be reduced below 12 hours. (A petition to the Arts and Sciences Petition Committee must accompany such a request to drop a course which does reduce the load below 12 hours.)

(4) Final approval to drop a course after the University's drop/add period must be obtained from the Dean's Office. Students must attend all classes for which they are registered. Failure to attend a class will not be accepted by the College as constituting a drop; the only procedure for dropping a class is the proper processing of a drop card which the student must initiate. The student is then responsible for taking the approved drop card to the Registrar for recording. It is the student's further responsibility to make certain that the drop is recorded correctly. It is a recommended practice for students periodically to confirm the proper registration of their courses at the Registrar's Office.

(5) Students dropping their entire courseload must contact the Office of the Registrar as this constitutes withdrawal from the University, and must be handled by withdrawal procedures established by the Registrar and subject to the published catalog deadlines.

Seniors must file formal application for a degree in the Office of the Registrar early in the quarter in which they expect to receive the degree. The official calendar shows the latest date on which this can be done.

Additionally, Seniors who plan to graduate should have their academic file reviewed in the College of Arts and Sciences office one to two quarters prior to their graduation. In their final quarter seniors should have corrected all "I", "X" and "H" grades to letter grades by *no later than the end of the fifth week.* Seniors are themselves responsible for seeing that all grade changes are properly submitted and recorded by the College of Arts and Sciences Office by the above deadline.

Registration in Graduate Courses: In accordance with the rules of the Graduate School, undergraduate students may not register in graduate courses (500 level and above) without permission of the College Dean. This permission is normally given only to students in their Senior year who are carrying not more than 17 hours and have an average of at least 2.8 Students must present written approval from both the instructor of the course and the graduate coordinator of the department offering the course.

Registration beyond normal period for completion of degree: Any student who has completed all of the academic requirements for the Baccalaureate degree but has not obtained the degree will be denied further registration in the College. A student who has completed more than 15 hours beyond the normal minimum requirement for his degree without receiving the degree, must obtain permission of the Dean for further registration.

Class Attendance: Although the general student academic regulations of the University do not require class attendance after the completion of the first 45 hours of freshman work, the University and this College do recognize the right of the individual professor to make attendance mandatory in his/her course and, where appropriate, and after due warning, to suspend students from those courses with failing grades for excessive absences.

Student Petitions: A student who feels that the College regulations work a particular hardship or injustice may petition for waiver of the regulation involved. Information on procedure in submitting such petitions is available in the Office of the Dean.

Other Student Regulations: The University issues a bulletin entitled *Student Guide* which contains much information of essential importance to any student. For example, the general regulations governing military training and student employment are covered. Each student in the College of Arts and Sciences should be familiar with this material. Copies of the bulletin may be obtained at the Office of Student Services.

Credit for Coursework Outside the College

General:

At the beginning of this section is a list of subject matter fields in which credit for a degree in Arts and Sciences is granted. The primary objective of this College is to provide its students with a liberal education and it is the conviction of the faculty that the fields listed are in general those which are conducive to a liberal education. However, a student may select for upper division elective credit up to 15 hours of work from other colleges within the University. *No credit will be given for coursework taken outside the College beyond the 15 hour limit.*

Special Cases:

1. The minimum total of 186 hours required for the bachelor's degree may include not more than 24 hours credit in education provided the student follows an approved program and becomes NCATE Certified. If a student is in a certification program, therefore, the only hours outside the college which could apply would be the 24 hours of education.

2. No more than 9 hours credit of ensemble music may be included in the minimum total of 186 hours. (This does not apply to Music majors).

3. In the first 96 hours of course work presented for admission to Arts and Sciences a student may receive credit for his degree for not more than 38 hours of work offered in other upper division colleges.

4. An approved interdisciplinary major may include more than 15 hours of course work in another College.

5. A preprofessional degree in Speech Pathology and Audiology may include up to 28 hours outside the College, as determined by the student's departmental advisor.

REQUIREMENTS FOR DEGREES

BACHELOR OF ARTS AND BACHELOR OF SCIENCE

The programs which lead to the degrees Bachelor of Arts or Bachelor of Science are alike in all basic requirements.

The degree Bachelor of Arts will be conferred upon those who fulfill the requirements for degrees with majors in one of the fields of American Studies, Anthropology, Art, Asian Studies, Classics, Criminal Justice, Economics, English, French, German, History, Music, Philosophy, Political Science, Religion, Russian, Sociology, Spanish, Speech, and Theatre.

The degree Bachelor of Science will be conferred upon those who fulfill the requirements for degrees with majors in one of the fields of Botany, Chemistry, Geology, Microbiology, Physics, and Zoology.

The degree of Bachelor of Arts or Science will be conferred upon those who fulfill the requirements for the degree with a major in Computer and Information Science, Geography, Mathematics, Psychology, Statistics, or an Individual Interdisciplinary program. A major in one of these subjects will lead to the Bachelor of Arts degree if the majority of subsidiary and elective credits in the student's entire undergraduate program are earned in the humanities and/or social sciences, and will lead to the Bachelor of Science degree if such subsidiary and elective credits are science credits. In no instance will the College confer two Bachelor of Arts degrees, or two Bachelor of Science degrees on the same student. The requirements for graduation with either of these degrees are as follows:

A minimum of 186 quarter hours credit (normally 96 in the lower division and 90 while registered in this College) with an overall average of "C" or better in all work transferred to or completed in the College and an overall average of "C" in all work attempted at the University of Florida. NOTE: Some credits approved by the Registrar as acceptable may not be applicable toward the minimum degree requirements of this College. For example, no credit earned through courses in the Career Development Program or through the College Level Examination Program may be applied towards satisfaction of degree requirements once a student has earned 96 quarter credits at any college.

The degree program must include (1) a basic distribution, (2) a departmental or interdisciplinary major (3) a foreign language proficiency (4) elective requirement and (5) residence requirement. Mere accumulation of credit hours will not be sufficient for graduation from this College.

A. Basic Distribution Requirement

Normally this work will be completed while earning the Associate of Arts certificate, before admission to the College of Arts and Sciences. For all students actually registering in the College, whose general education did not include at least the basic distribution credits listed below, alternate courses are specified which may be used by students classified 3AS or 4AS to make up deficiencies in the distribution requirement. For early admission students (less than 96 hours) the basic distribution coursework may also be satisfied by courses in University College, provided (a) that the student take such courses before completing 96 hours, and (b) that the student consult an adviser in the College of Arts and Sciences office. The student must earn a grade of "C" or better in each of the courses taken to fulfill the distribution requirements, and these courses may not be taken under the S-U option.

The requirement includes:

8 hours credit in social sciences

8 hours credit in English

8 hours credit in humanities

8 hours credit in physical sciences

8 hours credit in biological sciences

One course *in mathematics* — No credit towards an Arts and Sciences degree will be given for any course in mathematics which is largely a repetition of high school algebra.

A minimum of one laboratory course in either the physical or biological sciences must be included in the above distribution.

The following list is not a recommendation to students in other colleges nor is it intended to satisfy the requirements of any other college. To qualify for the Associate of Arts certificate, University College students should complete general education requirements as described in the University College section of this catalog.

The student is reminded that the alternate course offerings for University College and the College of Arts and Sciences may differ. Students should be aware that the biology course requirements in Arts and Sciences are not met by Agriculture General, Chemical Engineering, Environmental Engineering Sciences, Food Science, Forest Resources and Conservation, Health Related Professions, or Soil Science courses.

After a student has completed the first 96 hours in any college, and has transferred to Arts and Sciences, *only those courses listed below* will be accepted toward meeting the Arts and Sciences basic distribution requirement:

Social Sciences: Any course in American Studies, ASN 2001, Anthropology, Criminal Justice, Economics, Geography, History, Political Science, Sociology. Except: GEO 3200, DEP 3003, EAB 3002, EXP 3604, EXP 3204, PSB 3004, EAB 4022, EXP 4934, PPE 4324, PSB 4104L, DEP 5049, PSB 5115, ANT 3511.

English: Any course in English except LIS 2001, and ESL 2422.

Humanities: Any course in Asian Studies, English, Religion, Philosophy; THE 2000, Classics, Art, Music, Foreign Language literature, culture and civilization, HUM 2410, HCA 4410L, HCA 4102, HUM 4563, HUM 4564, except ASN 2001, LIS 2001, ENC 3351, ENC 4356, and Music ensemble courses.

Physical Sciences: Any course in Chemistry, Physics, Geology, Atmospheric Sciences, Astronomy, Comprehensive Physical Sciences, and GPY 3000.

Biological Sciences: Any course in Zoology, Botany, Microbiology and Cell Science; ANT 3511, APB 2150, APB 2151, APB 2152. Acceptable if taken at the University of Florida: DEP 3003, EXP 3604, EXP 3204, PSB 3004, DEP 5049.

NOTE: To meet the requirement in Biological Science at least 3 hours must be in a Biological Science Department. The other may be Anthropology 3511 or one of the approved Psychology courses.

Mathematics: Any course in Mathematics, except MAT 1003, MTB 3364; Statistics; or Comprehensive Mathematics courses if taken before 96 hours.

Laboratory requirement: Any course in a science department that has a regularly scheduled laboratory. Also GEO 3200, also GEO 3200 *plus* GEO 3200L, APB 2150, SOP 4214C, EAB 4022C, EXP 4934, PPE 4324C, PSB 4104L, CBH 4023C, PSB 5115C.

B. Foreign Language Requirement

All candidates for degrees awarded by the College of Arts and Sciences are required to have at least a minimum proficiency in some foreign language. The requirement may be met by the satisfactory completion of a sequence of three (3) five-hour courses including course work at the intermediate level (through 1112 or 1122). Students who plan to continue the study of a language which they began at another institution must take a placement test before registering. If proficiency through the 1112 or 1122 level is determined by examination, this will constitute completion of the foreign language requirement. Consult the appropriate language departmental office for specific examination schedules. Transfer students having fewer than 15 hours of one foreign language may complete the requirement beginning at the point determined by a proficiency test. The student is advised to take the language proficiency examination as early as possible after admission lest a basic course have to be repeated with the result that the student loses credit for prior coursework. If the student wishes to pursue study of a different language than that for which credit was previously earned, the earlier credit will stand. The language courses may be taken by the satisfactory-unsatisfactory grading option as long as they are not part of a major. Intensive summer study in French and Spanish is available for students who have earned no previous foreign language credit in college.

C. Elective Requirement

Of the minimum of 186 quarter hours required for a bachelor's degree in the College of Arts and Sciences, 96 are

normally earned before the student is admitted to this College. *At least 45 of the hours remaining after the first 96* must be earned outside of the student's major department. Thirty (30) of these hours must be in Arts and Sciences courses. Fifteen (15) may be taken in other colleges. Fifteen may be in courses outside the college. However, no more than 15 quarter hours outside the College of Arts and Sciences will be counted toward the 186 minimum (except in special cases. 1 and 4 under "Credit for Course Work Outside the College" in General Regulations, above).

D. Residence Requirement

The last forty-five hours to be applied toward a degree must be completed in residence in the College of Arts and Sciences. In special cases this requirement may be waived, but in no case may the amount of extension or correspondence work permitted exceed eighteen of the last fifty-four hours required for the degree.

E. The Major

1. *Departmental Majors:* A departmental major consists of a concentration of course work in a specific department. On the application for admission the student must indicate an intended major, using the exact terminology as on the list of majors at the beginning of the Arts and Sciences section of this catalog. Computer printouts for self-advisement cannot be prepared for students who fail to indicate a major precisely as listed. The number of credit hours required for a major will vary from department to department, but in no case may the number of hours required be fewer than 36 hours or more than 60 hours in the major department. The student should check the major requirements in the section of the catalog which lists the courses offered by the major department. Some departments may require subsidiary courses from subject-matter fields other than the major. No courses in the major in which the grade earned is below "C" will be counted toward the fulfillment of the minimum major requirement nor may they be taken under the S-U grading option. Work in the major taken in the University College or transferred to the University from another institution is included in evaluating the student's record for this requirement. However, all transfer credit in the major must be approved by the major department and any such credit which is not approved as a part of the major will not apply towards the total credit requirement for the degree.

2. *Interdisciplinary Majors:* As alternatives to the departmental major, the College offers two kinds of interdisciplinary majors:

a. The following interdisciplinary programs, which have been planned by the cooperating departments and adopted by the College, and which are described under the appropriate headings in the "Course Descriptions" section of this catalog:

1. American Studies
2. Asian Studies
3. Classics
4. Criminal Justice

For a description of each of these programs see the appropriate heading under the "Course Descriptions" section of this catalog.

b. Individual interdisciplinary programs which are initiated and designed by the student in consultation with faculty members from different departments, supervised by those faculty members, and approved by the Committee on Interdisciplinary Studies. The major consists of not less than 36 credit hours of related course work taken in two or more departments and may include more than 15 hours of course work in another college. A student electing to offer such a concentration must meet the foreign language requirement, take 45 credit hours of course work in areas of study not directly related to her or his concentration, take 10 credit hours of ASC 498 or equivalent courses, under either or both faculty members who agree to supervise the student's program, and produce a Senior thesis.

c. The following interdisciplinary programs have been developed as a result of recent student interest in these concentrations:

Atmospheric Sciences

Biochemical and Neural Sciences

Linguistics

Neurobiological Sciences

Urban Studies

Film Studies

Students interested in pursuing an Interdisciplinary major should contact Associate Dean Ruth McQuown in the College of Arts and Sciences Office.

ATMOSPHERIC SCIENCES (METEOROLOGY)

Undergraduate students in the College of Arts and Sciences may be approved to develop an individualized interdisciplinary major in Atmospheric Sciences (or Meteorology) leading to the B.S. degree. The program is designed to provide the student with a background in the atmospheric sciences and their applications to such problems as air pollution, economic impact of weather on agriculture, influences of anthropogenic chemical releases on weather, atmospheric radiation, transmission of solar radiation through the atmosphere, and soil-water-air interfaces. The curriculum includes courses from such departments as Physics and Astronomy, Environmental Engineering Sciences, Fruit Crops, Mechanical Engineering, Agricultural Engineering, and Chemical Engineering.

For further information, consult Dr. Alex E. Green, 221 Space Sciences Research Building.

BIOCHEMICAL AND NEURAL SCIENCES

Undergraduate students interested in advanced work in biochemistry and neuroscience, as well as in the interdisciplinary area of neurochemistry, may apply for acceptance into the individual interdisciplinary major program of Biochemical and Neural Sciences in the College of Arts and Sciences. The program offers considerable breadth by virtue of its flexibility and the broad range of required and elective courses. Graduates of this program would have excellent backgrounds for research in a variety of the basic medical sciences, and would be well qualified for a variety of graduate and medical school programs.

Program applicants are required to have a good background in basic chemistry and zoology courses. Advanced-level work includes 1) course work required by both the Biochemistry and Neuroscience Departments. 2) research in neurochemistry, neuroscience, or biochemistry; 3) other elective courses to be selected from offerings by the Departments of Biochemistry, Botany, Chemistry, Microbiology, Neuroscience, Psychology, and Zoology.

For further information about the program as well as other programs which can be developed in other programs which can be developed in other departments within the basic medical sciences, concult Dr. James A. Deyrup, Assistant Dean, College of Medicine, M128, Medical Sciences Building, J. Hillis Miller Health Center.

LINGUISTICS

An individualized major in Linguistics may be approved for undergraduate students in the College of Arts and Sciences. This program is designed to provide the student with a background in the study of language, dialects, communication, and particular languages. It will prepare the student for

graduate work in linguistics or the study of languages, the teaching of English as a foreign language, and advanced work in the neurobehavioral sciences. The curriculum includes certain required core courses and optional courses from a variety of fields.

Interested students may consult Dr. Jean Casagrande, 478 Grinter Hall.

NEUROBIOLOGICAL SCIENCES

An individual interdisciplinary major in Neurobiological Sciences may be developed by academically strong undergraduate students in the College of Arts and Sciences through the faculty of the Center for Neurobiological Sciences. The program is intended to provide the student with a fundamental and broad-based academic foundation for graduate and professional programs and related areas.

The curriculum includes core requirements covering humanities; social sciences; and physical, natural, and biological sciences. In addition to the core requirements, students select courses in either a very broad or a more specialized program in, for example, such areas as animal behavior, neurochemistry, neurophysiology, sensory mechanisms, neuroendocrinology, brain and behavior, or neuroembryology. In order to focus their academic work in the various areas, all students in the program are required to participate in research with a member of the faculty of the Center for Neurobiological Sciences, coupled with a research seminar.

For further information about this program, consult Dr. Carol Van Hartesveldt, 359 Psychology Building.

Urban Studies

Students in the College of Arts and Sciences who wish to pursue a major concentration in urban studies may apply to do so as an individual Interdisciplinary major. The Urban Studies major is designed to provide a sound and broadly based program in the social sciences for students who plan to enter professional planning schools, graduate urban studies programs, or expect to work upon receipt of the baccalaureate degree.

The core of courses required of all students in the major provides the broadest possible exposure to the several disciplines concerned with urban problems and also to the broadest range of methodologies used in urban analysis. The major includes IDS 4905, a ten-credit course designed to provide the student with an opportunity to integrate his or her disciplinary knowledge. If possible, the research project in that course is carried out in conjunction with an internship in a firm or agency suitable to the student's interests.

A number of faculty members from departments in the social sciences serve as a panel from which the student chooses a committee of at least two members to supervise his or her progress through the program and the IDS 4905 project.

Questions about the program may be directed to Dr. Virginia R. Hetrick, 3141 GPA.

FILM STUDIES

The College of Arts and Sciences in conjunction with other colleges offers a variety of courses related to the study of film as an art form. Students, working with the film studies adviser, construct their own patterns of courses suited to their personal interests. Courses offered in film work include:

RTV 3100 Broadcast Writing (4)*
RTV 3210 Broadcast Production I (4)*
RTV 3220 Broadcast Production II (4)*
RTV 3201 Broadcast Production III (4)*
FIL 4202 Cinematography for TV (4)*
RTV 4311 Documentary for TV (4)*
BR 358 Radio, Television and Film Writing (3)*
ENG 2120 Introduction to the Film (4)
ENG 3132 Movies as a Narrative Art (3)*
ENG 3135 History of the Film 1 (4)*
ENG 3136 History of the Film 2 (4)*
ENG 3812 The Theory and Practice of Modern Criticism (3)*
LIT 4930 Myth in Film and Literature (4)
ENG 4141 Film Studies (4)
ENG 6143 The Language of Film (4)*
PHI 3800 Philosophy of Art (5)
ENG 6144 Studies in Movies (4)*
THE 2000 Theatre Appreciation (4)

Students interested in the program are referred to Professor William C. Childers, 4221 GPA, for information and advisement.

*Courses have prerequisites.

College Honors or High Honors will be awarded to any student who completes an individual interdisciplinary major program; earns in upper division work a grade point average of 3.3 or higher for Honors, or 3.5 or higher for High Honors; earns in the major work a grade point average of 3.3 or higher for Honors, or 3.5 or higher for High Honors; and is recommended by two members of his or her supervisory committee (including the principal supervisor) as having conducted an individual project in IDS 4905 which is of high quality and reflects the interdisciplinary nature of the student's program.

Detailed information is available from Dean Ruth McQuown, 2121 General Purpose A Building.

ARTS AND SCIENCES HONORS PROGRAMS

Consistent with its view that higher education should result in the development of each student as an intellectual individual, this college gives its students individually tailored degree programs of formal courses. In addition the College offers a variety of opportunities for independent and seminar honors work to those of its undergraduates who have demonstrated appropriate qualifications.

Superior students should take initiative in planning undergraduate and graduate programs. They should consult advisers about Departmental and High Honors, Phi Beta Kappa, and scholarships like Rhodes, Danforth, Marshall, Fulbright-Hays, and the National Science Foundation. For futher information see Professor Sidney Homan in 4366 General Purpose A Building.

Dean's List

The Dean's List recognizes outstanding academic achievement at the completion of each quarter. Inclusion on the list is awarded to all students who during that term have earned a grade point average of 3.5 or higher on coursework of at least 15 hours. This award is not granted for courses taken under the S-U option or for which a grade of "I", "X" or "H" has been submitted.

Departmental Honors

A student may be recommended for this distinction by his major department. Each department will set its own requirements for departmental honors work and will be required to print them explicitly in the catalog.

Baccalaureate College Honors

College Honors will be awarded to all students who earn a grade point average of 3.3 or higher in their upper division work and either (1) successfully complete a departmental honors program or (2) satisfactorily complete at least 12 credits of the College Interdisciplinary High Honors Seminar (IDS 4938).

Baccalaureate High Honors

High Honors will be awarded to all students who earn a grade point average of 3.5 or higher in their upper division work and either (1) successfully complete a departmental honors program or (2) satisfactorily complete at least 12 credits of the College Interdisciplinary High Honors Seminars (IDS 4938).

High Honors Seminars: High Honors Seminars bring together outstanding faculty and students from the four major divisions in the College: Humanities, Social and Behavioral, Biological, and Physical and Mathematical Sciences. Some seminars explore the inter-relation of the disciplines; one week a poet may be the guest, the next week a nuclear physicist. Other seminars focus on a specific topic, such as impeachment or the concept of rhythm in music and the biological world. Students share the responsibilities of working with the guests, devising new seminars, inviting visiting campus speakers and dignitaries to the program. There is a special room and library for the participants, as well as an expense fund for books and travel. Work is done both in the seminar room and in the field.

A candidate for High Honors normally registers for IDS 4938 for three quarters, preferably consecutive, and earns 12 hours creditable towards the elective requirement. The aim is to have a place in a High Honors seminar for all qualified and interested students. Membership is open to Juniors or Seniors with at least one quarter of residence in the College; students are chosen on the basis of academic average, service to the university and the community, and an informal interview with the High Honors Board of Directors. But the main criterion is: what unique gift can the individual student bring to the discussion?

Qualified students may get application forms in 2008 General Purpose A Building. Applicants should consult the High Honors Director, Professor Sidney Homan, in 4336 General Purpose A Building at least a quarter in advance of that for which they seek admission.

The High Honors Seminars are designed to complement University College and Departmental honors programs. For students and faculty, participation is recognition of their high standing in the College and of their desire to be useful members of society.

PHI BETA KAPPA

Phi Beta Kappa is an honorary scholastic society for students of high intellectual ability with a broad liberal education. The first chapter was founded in 1776 at the College of William and Mary. The UF chapter was established in 1938. Election is by invitation, not application.

Not over 10 percent are chosen from those ranking academically in the upper 15 percent of the senior class in the College of Arts and Sciences who also meet the following criteria: at least 68 quarter hours of courses in the College of Arts and Sciences; completion of the foreign language requirement; a broad distribution of letter-graded upper division electives outside the major subject (notably, in the humanities, social sciences, mathematics, and the physical and biological sciences); and superior academic performance in lower and upper division generally, as well as in the major field.

Students in colleges other than Arts and Sciences who meet these requirements may be recommended in writing by the dean of their College. The society also considers a selected number of graduate students in Arts and Sciences who have earned the Ph.D. during the previous year.

For further information, communicate with the Chapter Secretary, whose name and address can be obtained from the Office of the Dean of the College of Arts and Sciences.

SPECIAL PROGRAMS

TEACHER PREPARATION IN ARTS AND SCIENCES

Students may earn their degrees in the College of Arts and Sciences, and complete requirements for certification as high school teachers in one or more academic subjects by following one of the Arts and Sciences-Education Programs described in the College of Education section of this catalog.

Forther information may be obtained in the office of Student Academic Affairs of the College, 2008 General Purpose A Building.

SPECIALIZATION IN AUDIOLOGY AND SPEECH PATHOLOGY

A preprofessional academic/clinical program precedes the master's degree study which is accredited by the American Board of Examiners in Speech Pathology and Audiology. This program may be arranged through the College of Arts and Sciences or the College of Education. For admission to either program the student must consult a faculty adviser assigned by the Department of Speech (442 Arts and Sciences Building). Program requirements are described in the Speech Department section of this catalog.

To qualify for the Certificate of Clinical Competence in Audiology or in Speech Pathology awarded by the American Speech and Hearing Association or to obtain endorsement by the College of Education and the Department of Speech for State Department of Education certification in Speech Correction, it is necessary to complete a master's degree or equivalent.

SPECIALIZATION IN THE FINE ARTS

Music: Students interested in majoring in music should consult the faculty adviser, Music Building, as soon as possible in their college program.

The student who selects a major in Music must earn a total of sixty quarter hours in the following courses:

	Hours
Applied Music in approved courses numbered above 100	12
Theory of MUT 1111, MUT 1112, MUT 1113, MUT 1241, MUT 1242, MUT 1243, MUT 2116, MUT 2117, MUT 2118, MUT 2246, MUT 2247, MUT 2248	24
Survey of Music History, MUH 3211, MUH 3212, MUH 3213	12

Upon completion of the above courses, the student must select an area of concentration, i.e., Applied Music, Theory of Music or History and Literature, and earn twelve credits in that concentration. (These required twelve credits are in addition to those listed above and must be specifically approved for each student.) The student must also register for and participate each term in ensemble music groups.

A piano proficiency examination is required of all music majors. The student must take Piano Skills until he has met this requirement.

A Senior student concentrating in the area of Applied Music will present a Senior Recital. In the areas of Theory and History and Literature, the Senior will present a project which demonstrates his competence in his area of specialization.

For graduation with departmental honors in music, the student should apply to the chairman of the teaching faculty in his intended area of concentration at the beginning of his Junior year. In addition to the grade-point average requirement, the student concentrating in the area of Applied Music will present a Senior Recital which is adjudged by the music faculty as having reflected honors-level work in applied music in the upper division. The student in Theory of History and Literature must present an honors project in his specialized area. This project will be prepared in connection with twelve credit hours from Music Theory courses MUT 3611, 3612, 3321, 3322, MUC 3201, 3202, MUT 4411, 4421, or MUC 4301, MUL 3351, 3341, or from History and Literature courses, MUL 3362, MUH 3541, MUR 3401, MUH 3211, MUL 4371, MUL 4811, MUH 4331, MUL 4361, MUR 4801; and with the approval of the music faculty.

ART: The student who elects a major in Art must earn a total of not less than forty-five quarter hours including the following courses: (1) ART 1201C-ART 1203C, ART 1300C-ART 1301C, ARH 2050-ARH 2051-ARH 2052, a total of twenty-one hours; (2) a minimum of twelve additional quarter hours in a single field of specialization: Fine Arts; History of Art; or Crafts; and (3) ARH 4453, 4 hours.

Students should consult Professor Eugene E. Grissom in planning a major program.

THEATRE: Students selecting Theatre as a major must earn a minimum of 45 credit hours in theatre courses. The specific

individual program should be worked out in advance with Professor E. James Hooks.

Transfer students must earn at least 18 credits in the department. Transfer credits will be evaluated in terms of their appropriateness. to the degree requirements. In special cases, auditions or tests may be conducted.

Core Curriculum required of all B.A. candidates: ORI 2001 — Oral Performance of Literature; TPP 3110 — Acting 1; TPA 3200 — Stagecraft and Design 1; TPP 3650 — Play Analysis; TTP 3310 — Directing 1; TPP 3311 — Directing 2. Total: 24 credits.

Additional requirements: 1) Student must complete at least three of the two or three course sequences in Theatre (excluding the 3310, 3311 Directing sequence). 2) Student must complete at least eight credits in courses numbered 4000 or above.

Curriculum limitations: 1) Student may not earn more than eight credits in Acting. For B.A. candidates, Acting 1 and 2 (TPP 3110, 3111) will constitute a course sequence. 2) Student may not earn more than eight credits in Movement. For B.A. candidates, Movement 1 and 2 (TPP 3510, 3511) with constitute a course sequence.

CERTIFICATE PROGRAMS

AMERICAN AREA STUDIES PROGRAM

In addition to the major in American Studies (see description under interdisciplinary studies in this section) the College of Arts and Sciences offers a certificate program for students majoring in a conventional discipline who wish to focus their work on America. The student fulfills the requirements for a departmental major, elects 36 credits from among American related courses, including those in his major field, and take AMS 2030, Introduction to American Studies; AMH 4041, Studies in American Civilization; and AMH 4935, Senior Seminar in American Civilization. Interested students are referred to Professor Stephen S. Conroy, 3350 GPA, for information and advisement.

LATIN AMERICAN STUDIES PROGRAM

For students interested in Latin American area studies, the College of Arts and Sciences offers two options:

1. A special curriculum, based on a single departmental major (selected from the fields of Anthropology, Economics, Geography, History, Political Science, Sociology, and Spanish), leading to a B.A. degree and a Certificate in Latin American Studies. (See Latin American Studies section of this catalog); or

2. An individual interdisciplinary program, developed and coordinated through the Center for Latin American Studies and approved by the Interdisciplinary Committee of the College of Arts and Sciences, and leading to a B.A. degree. (See section on degree requirements for College of Arts and Sciences.

Through special arrangements, undergraduate students in the College of Business Administration, the College of Education, and the College of Journalism and Communications may participate in the above programs.

SOVIET AND EAST EUROPEAN AREA STUDIES

The College of Arts and Sciences offers to undergraduate students an integrated program in Soviet and East European studies. The program provides a broad foundation for those preparing for graduate work in the field and for those who plan a career in government service.

The program is based on a major in one of the following departments: Economics, Geography, History, Philosophy, Political Science, Religion, Foreign Languages. The student must demonstrate a reading knowledge of Russian or an East European language, and his over-all program must include at least 36 hours of work from the courses listed below. A maximum of 14 course hours within the major may be used in fulfilling the 36 hour area requirement.

Courses in the program include: ECS 4013, 4003, ECO 4905, 513, ECO 6306; FLE 230; GPY 490, 491; EUH 3571, 3572, 3573, ECS 4334, HIS 4930, EUH 5934, 6339, 6320, POT 4414, CPO 4633, 4614, POS 4932, 4905, CPO 5636, 5065, 6637; POL 1120, 1121, 1122, 136, 427, POL 4905, 596; REL 3492; RUS 1120, 1121, 1122, 2200, 2110, 3240, 4300, 4840, 4700, 414, RUW 4100, 4101, 440, 441, RUS 4905, 5301, 5845, 54S0, 514, RUW 5120, 5121, 540,, 551, RUW 5906; PHP 3765. Fifteen credits of German may also be accepted for students who are specializing in the German Democratic Republic or comparative communist systems.

All students interested in this program, including lower division students, should consult with Dr. Marvin Entner, Room 105 Grinter Hall or with Dr. James F. Morrison, Room 429 Grinter Hall.

AFRICAN STUDIES PROGRAM

The African Studies Program is administered by an African Studies Center responsible for the direction and coordination of interdisciplinary instructional and research activities related to Africa. It cooperates with University departments, schools and colleges in administering and staffing a coordinated certificate program. The Center does not offer an interdisciplinary degree. With the cooperation of participating departments, it offers a certificate in African Studies in conjunction with the B.A., M.A. and Ph.D. degrees.

To receive a Certificate in African Studies in conjunction with the B.A. degree a student must: 1) take AFS/BES 2002 Introduction to African Studies, HUM 2420 African Humanities, FOL 3730 Introduction to African Linguistics, AFS 4935 African Studies Senior Integrative Seminar; 2) three of the following: ANT 4352 Africa — Traditional Peoples and Cultures, GEO 4905 Geography of Africa, AFH 3100 Africa to 1800, AFH 3200 Africa Since 1800, HUM 2930 The Language of Art, Literature, and Religion in West Africa, CPO 3204 African Government and Politics; and 3) 11-12 credits of distribution requirements which may be met by courses with specific African content excepting SWA 1120. A list of approved courses for requirement 3) is available on request from the Center office.

For Certificate requirements at the M.A. and Ph.D. levels see the Graduate School Catalog. For further information on the Center's Certificate requirements, interdisciplinary majors based on African themes, and other related matters contact Professor Haig Der-Houssikian, Director, Center for African Studies, 470 Grinter Hall, University of Florida, Gainesville, Florida 32611.

AFRO-AMERICAN STUDIES PROGRAM

An interdisciplinary program leading to a certificate in Afro-American Studies is offered by the College of Arts and Sciences. The program is designed to furnish students an inclusive knowledge of the historical experience and condition of peoples of African origin in America. Courses in the program are offered by a number of departments including Anthropology, Economics, English, History, Political Science, and Sociology. In order to be awarded the certificate the student must complete at least thirty-six credits from the courses offered, constructing in consultation with the program adviser a pattern of classes which best fits his interests and needs. In addition, the student must complete a departmental major and fulfill the requirements for graduation from the College of Arts and Sciences.

Requirements for the certificate include: (1) one or two courses from the African Studies Program plus AFH 3100, Africa to 1800, 4 credits; (2) the introductory foundation course, AFA 2000, Introduction to Afro-American Studies, 4 credits, normally taken in the Sophomore year; (3) AFA 4936 Afro-American Studies Senior Integrative Seminar I, 4 credits, which serves to further identify and explore problems in the Afro-American field; (4) AFA 4937 Afro-American Studies Senior Integrative Seminar II, 4 credits, enabling the students to work with specialists on Afro-American research problems.

Additional courses in the program include: courses in the African Studies Program; ANT 4451, LIT 3321, 3342, ECP 4143, HY 349, 350, PPY 490, AMH 4579, 4578, MUH 4116, MUH 4561, (when applicable), PUP 4003, PUP 4313, EXP 4124C, SOC 2020, SOC 3745, SSI 4602.

Interested students are encouraged to contact the program director, Professor R. C. Foreman, Jr., 214 Building

D; or Professor Stephen Conroy, 219 Building D, as soon as possible.

WOMEN'S STUDIES PROGRAM

The College of Arts and Sciences offers a Certificate Program in Women's Studies for interested undergraduate students. Students majoring in traditional disciplines are advised by a six-person Steering Committee which will plan and administer programs with a focus on the roles and potential roles of women.

The Program cooperates with other colleges and departments on campus to coordinate each student's major with her/his special interests, needs and projected future.

To receive a Certificate in Women's Studies a student is required to complete courses totaling 18-20 credits from a selection of Women's Studies courses offered by departments in Nursing, Economics, Psychology, Education, English, Humanities, Anthropology, Political Science, Black Studies, Philosophy, Physical Education, Behavioral Studies, etc. The required core course is WST 3010 (Interdisciplinary Perspectives on Women — 4 credits) which is offered during the fall and spring quarters.

Interested students should contact Professor Irene Thompson, Program Coordinator, in 4358 GPA, for further information.

WESTERN EUROPEAN STUDIES PROGRAM

The College of Arts and Sciences of the University of Florida offers an undergraduate interdisciplinary program leading to the Certificate in Western European Studies. The program is designed for students interested in Western European culture, language, history, society, and politics. It should also be of value to students who wish to become European regional specialists or who are contemplating careers in such fields having to do with Western Europe as government service, international law, business or trade.

Each student works with an adviser in constructing a program of courses suited to his own specific interests, needs, and background. The student majors in the department of his choice but selects courses with Western European content from a number of the following departments involved in the program: Anthropology, Art, Economics, English, Geography, Germanic Languages and Literatures, History, Music, Philosophy, Political Science, Religion, and Romance Languages and Literatures.

In order to receive a Certificate in Western European Studies, a student is required (1) to complete courses totaling at least 36 credits (up to 15 of which may be from his major department) from among appropriate courses with Western European orientation in the participating departments; (2) to take a minimum of two courses from the European history sequence or to offer an equivalent substitute selected in consultation with program adviser; (3) to demonstrate a reading and speaking knowledge of a Western European language (this requirement may be satisfied either through course work or with a special examination; the same language may not, however, be offered simultaneously to meet the requirement of some other area study program); (4) to participate in EUS 4935, the interdisciplinary Western European Studies Seminar during Winter Quarter of his Senior year.

Students desiring further information about the program are urged to contact any member of the Western European Studies Committee: Professor Douglas Bonneville, Romance Languages; Professor David Denslow, Economics; Professor David Conradt, Political Science, chairman; Professor Ernst Schurer, Germanic Languages; or Professor John Scmmerville, History.

ENVIRONMENTAL STUDIES MINOR PROGRAM

A program for a minor (with certificate) in Environmental Studies is available for anyone with a major in the College of Arts and Sciences. The program is designed to be of interest to students concerned with environmental issues. Electives can be structured around an environmental theme, giving experience in an area that may expand career opportunities and make education more meaningful.

The course selection will serve to increase the student's knowledge of the interaction of man and his environment. A number of environmentally related courses requiring no prerequisites are included to help non-science majors become environmentally aware. Science majors will be able to relate their major discipline to current environmental problems through more advanced course work.

The Environmental Studies minor requires a minimum of 18 credits of approved environmentally oriented courses with at least one each from the Social, Physical and Biological Sciences to total 12 to 15 credit hours.

Courses required for the student's major cannot be counted toward the minor requirement. Courses both within and outside the College which bear on various aspects of environmental problems may be used for the minor and at the same time to fulfill the student's elective requirements. The Arts and Sciences limitation of 15 hours which may be taken for credit outside the College is waived for the Environmental Studies minor. An inventory file of approved courses for the Environmental Studies minor is available in 210 Bartram West.

Students interested in the *minor* should consult with their departmental adviser and the Environmental Studies Adviser in 210 Bartram Hall.

It is also possible to develop a major in Environmental Studies under the College's individual Interdisciplinary major program, where one is able to formulate a major from appropriate course areas in two or more departments. Students interested in an interdisciplinary major in Environmental Studies are referred to the interdisciplinary major description under the Arts and Sciences section of this catalog. Those interested in the major should contact Dean Ruth McQuown, 2121 General Purpose A Building.

CORE PROGRAMS

SOCIAL INTERVENTION SYSTEMS

This interdisciplinary curriculum is designed to give the student knowledge of the nature and interrelationships among various social and community organizations. At the outset, coursework will emphasize general topics such as urbanization, minority group relations, and social change. The student may then emphasize a more specialized area such as medical sociology, deviant behavior, gerontology, or educational sociology.

This program will: (1) enable the student to more effectively participate in community living, (2) prove valuable for students wishing to pursue community work, and (3) provide an adequate foundation for students planning graduate work in Sociology or Social Work.

The Social Intervention program leads to the degree of Bachelor of Arts and all requirements for the departmental major in Sociology must be met. The strength of the program, however, lies in its interdepartmental nature. The student will be expected to include courses in Anthropology, Economics, History, Political Science, and Psychology among his or her electives.

Interested students should contact Professor Pamela Richards, Department of Sociology, for assistance in planning their programs.

GOVERNMENT ADMINISTRATION, MANAGEMENT, and PLANNING

The undergraduate core program in public administration provides students with a broad foundation in the management practices and related issues, and in the public policy implications of administration at all levels of contemporary American government. This program is recommended for students who will be seeking either entry level career positions in government or graduate level programs of professional training in public administration.

Students in the public administration core program will ordinarily major in Political Science and will concentrate on administrative and related courses both in their major and in their electives. Students in this program are authorized to take up to 15 hours of coursework outside of the College of Arts and Sciences in order to pursue studies in the

management area. Recommended courses for students in the public administration core are listed below:

A. Strongly recommended Political Science courses: PAD 4003, PAD 4034.

B. Recommended Political Science courses: POS 2112, POS 3413, PUP 3204, POS 3142, PUP 4003, PAD 4803, PUP 4404.

C. Strongly recommended courses outside Political Science: ACC 2001, STA 3013, or 3023, ECO 2013, 2033, ES 534.

D. Recommended courses outside Political Science: PSY 2013, PSY 340, ECO 4504, SOC 2000, SOC 3310, SOC 3745, MAN 3301, MAN 4310, CIS 3120, QMB 3700, SCH 302.

Actual work experience in government is an invaluable adjunct to a student's program of formal study in the field of public administration. For this reason students are encouraged to seek out temporary positions in government agencies as summer jobs. Several different kinds of opportunities are available. Some students have been successful in finding such positions in the local governments of their home towns. Other students have located jobs in state agencies either in Tallahassee or in regional offices located throughout the state. Students may also seek positions through the federal summer internship programs; information on federal work opportunities is available through the Career Planning and Placement Center in Reitz Union. Students who are interested in working out a program of study and analysis to complement their work experience in these kinds of jobs may receive up to 5 hours of credit under a POS 4930 Special Topics course.

JEWISH STUDIES

Administered by the Center for Jewish Studies, this program provides an interdisciplinary and interdepartmental curriculum which serves as a basis for understanding the broad sweep of Jewish civilization. Through course work in various departments, including Religion, Foreign Languages, English and Philosophy, students may acquaint themselves with and specialize in areas within Jewish studies including Biblical Studies, Jewish history, Jewish philosophy and Jewish literature. It is expected that students in the program will demonstrate or acquire competence in Hebrew. The program may serve as preparation for graduate work in Jewish Studies, whether in a university or seminary setting.

The Jewish Studies program leads to the degree of Bachelor of Arts and requires completion of a departmental major. Working with advisers from the Center for Jewish Studies, students may construct individually oriented programs best suited to their needs, programs that take full account of previous preparation. Interested students should consult with Professors B. Mesch or S. Isenberg, Department of Religion.

ENGLISH LANGUAGE INSTITUTE

A full-time noncredit, nondegree program in English as a second language is available to foreign students with some knowledge of the language who wish to increase their competence. The program, which may be taken any of the quarters of the academic year, emphasizes the oral and written skills needed by students from abroad who plan to attend a university in the United States. Further information is available from Dr. Jayne C. Harder, Director, English Language Institute, 162 Grinter Hall, University of Florida, Gainesville, Florida 32611.

CHAIR OF AMERICAN STUDIES

Through the generosity of the American Legion, Department of Florida, which has provided a fund of $40,000 for this purpose, supplemented by legislative appropriation, there was established a Professorship in the Department of History of the College of Arts and Sciences known as the "Chair of American Studies." This chair was established to present courses and lectures on American ideals, American government, American institutions, and American citizenship.

The Professor of American Studies was designated to teach courses in American History and to promote special programs on American ideals. Although the University offers for Freshmen a nine credit, three quarter course entitled, "American Institutions," a number of additional courses in American History are offered as electives. A central theme in many American History courses is the struggle of the people of the United States for a more perfect democracy.

Part of the income from the endowment of the Chair of American Studies is used to bring outstanding Americans to the University of Florida for a series of addresses on the theme of American traditions. Many of the lectures are published and distributed as a part of the American Studies program of the University.

PLACEMENT SERVICE

The Career Planning and Placement Center, located in Suite G-22, J. Wayne Reitz Union, is the centralized job placement facility for students and alumni of the College of Arts and Sciences.

The Center contains an extensive Career Information and Resources Library, and an audio-visual inventory of career investigative and job search materials. You may wish to use these on a self-help basis or in conjunction with personal or group vocational/occupational counseling.

Personnel at the Center will help you identify career choices and match these with your academic major or interests. You will, also, find assistance in developing a career plan, organizing a personal job search program and improving your communication skills in interviewing, resume and application letter writing.

The objective is to aid you in putting your education to work in a field that will be both satisfying and rewarding to you. In this regard, the Center hosts several hundred representatives from business, industry, education and government each year. These persons are on campus to interview job candidates in fields ranging from bachelor liberal arts graduates to science doctorates.

Undergraduates should register with the Center immediately upon starting their Senior year of college. Graduate students should register as they enter the final year of their studies.

For additional information visit the Center or contact Mr. Maurice E. Mayberry, Director.

STUDENT COUNCIL

Of all types of student organizations on campus, few are concerned specifically with enhancing the academic and intellectual environment within the college community. The Arts and Sciences Student Council claims such concern. Composed of student representatives from each of the college's departments, the Council acts to initiate and promote effective two-way communication between students and faculty and administration. Further, it provides students an opportunity to creatively participate in the decision-making processes within the College through their role as an advisory body to the Dean.

In recent years, the areas of faculty-student interaction, student rights, teaching excellence, and quality of education have received special scrutiny by the Council. As a result, several ongoing programs have been established. These include a fully equipped Calculator Laboratory and a Peer Advising Staff. To encourage and honor teaching excellence, the Council presents the annual Teacher of the Year Award. And for the protection and furthering of student rights a student grievance board has been made available. Many other projects are undertaken on a quarter-to-quarter basis such as bringing distinguished personalities-of-note to campus and the sponsoring of debates and seminars on a wide range of topics.

The Council's growth and effectiveness depends upon student involvement. Interested participants should contact the Student Council office, 3355 General Purpose A Building, or the Arts and Sciences Office.

STUDY ABROAD (BOGOTA)

An agreement between the State University System of Florida and the Universidad de los Andes in Bogota, Colombia, allows undergraduate students to study in Latin

America for up to one year. The program is administered through the Center for Latin American Studies.

The Universidad de los Andes is a private university with an organization similar to that found in U.S. institutions of higher education. Bogota, the city in which the Universidad de los Andes is located, is the capital of Colombia. It offers a variety of music, art, theater and museums and enjoys a year-round Spring-like climate.

The principal features and requirements of the program are:

Length of Program: Interested students may attend an Intensive Course in Spanish for Foreign Students offered for six weeks during June and July annually. In addition, they may take up to two regular semesters in residence, August to December and January through May.

Courses: All credits earned at Universidad de los Andes are transferable to the Florida institution on the basis of prior approval of student's U.S. advisor or Registrar. Arts and Sciences majors must have prior approval of the Dean of the College.

Faculty: The greater part of the faculty of Universidad de los Andes have received graduate degrees or training in the United States and about 28 percent are graduates of foreign universities.

General Educational Requirements: Applicants must have completed at least 48 quarter hours of college or university work.

Academic Prerequisites: An academic average of 2.5 or better on all work completed at U.S. institutions, over a period of four quarters.

Language Prerequisites: A minimum of four quarters of college level Spanish, completed before departure, or a certificate stating that student has completed a functional Spanish language test.

Tuition: Same as for Colombian students, approximately $175 US for the Summer Intensive Language course and approximately $400 US for each semester.

Housing: While in residence at Universidad de los Andes, U.S. students will be housed and fed in approved private Colombian homes. Cost will be approximately $100 US per month for room, meals and laundry.

Health Insurance: Students may be covered by the same Blue Cross-Blue Shield Student Preferred Contract available to students of the State University System of Florida, approximately $8.36 bimonthly for an individual and $23.92 for a family.

Travel Costs: Spring 1976, rates subject to change: Round trip Miami-Bogota, valid for one year $283. APPLICATION DEADLINES. *Two months* prior to departure.

For additional information write to Assistant Director, Center for Latin American Studies, 319 Grinter Hall, University of Florida, Gainesville, Florida 32611 (904 392-0186).

STUDY ABROAD (UF-POZNAN EXCHANGE)

The University of Florida has had an exchange program with the Adam Mickiewicz University of Poznan, Poland, since the fall of 1973. It is the largest and most comprehensive program between an American university and a university in the communist world. Within the framework of the program there are a number of opportunities for Florida undergraduates, graduate students, and faculty to spend from 3 to 12 months in Poland—in Poznan or in other Polish higher educational institutions elsewhere in the country.

Up to 14 fellowships are available for UF graduate students (or exceptionally well-qualified and highly motivated mature undergraduates) to spend 9 months studying or doing research in Poland during the academic year. Stipends cover Polish university tuition, dormitory room, health care, the opportunity to purchase meals at a reduced rate ($12/month) in student cafeterias, 1/3 reduction on urban public transportation and inter-city rail fares, other privileges of Polish students, plus 2400 zloty ($80 at the 33:1 tourist rate of exchange) per month for expenses. Students are able to pursue almost any course of study under the direction of a Polish faculty sponsor who is normally selected after the student's arrival in Poland. Students participating in the exchange should have as much knowledge of Polish as possible and can build up their knowledge of Polish in the following ways: taking Polish 133-134-135 at UF during the academic year; taking an intensive 10-15 credit Polish course at UF in the spring; participating in the UF summer program in Poznan (see next item below), which is normally a requirement for participation in the year-round program; and taking part in the intensive Polish language program offered during the academic year in Poznan (a program that gradually diminishes in intensity as the students begin to get more involved in auditing courses and special research projects under the supervision of their faculty sponsors).

During the summer a special 8-week institute on Polish language and contemporary Polish society is offered in Poznan under the joint sponsorship of UF and the institute of English of the A. Michiewicz University of Poznan. Full participation in this summer program is worth up to 15 UF quarter hour credits. Students may sign up for 5-15 credits of political science (Polish political and social institutions), 5 credits of history (modern Polish history), or 5-10 credits of economics (socialist economic systems and economic planning). This program is open to anyone—including out-of-state students who may take the course on a non-credit basis or arrange credit at their own institutions on the basis of a letter provided by the A.M.U. staff and UF summarizing their "non-credit" work. The approximate cost of the 8-week program is $6000 (including UF tuition or non-credit fees, room, meals, visa, and required field trips in Poland) plus transportation to and from Poland and the cost of any travel in Poland or elsewhere in Europe before or after the summer program. (If there is sufficient interest shown by the students, a 10-14 day informal tour of Poland will be arranged at the end of the 8-week program.)

It is also possible for UF faculty to spend from one month to a year in Poland under the auspices of our exchange program, either lecturing (in English), doing research, or both. It is easiest to work out a direct exchange with a faculty member from Poland, but it is also possible for a few UF faculty members to go to Poland each year without such a direct exchange. The UF faculty member receives either a small per diem (for short-term visits) or a salary in Polish zloty, plus housing, health insurance, and a 50 percent reduction on train travel in Poland. In some cases travel grants can also be arranged for the grantee (but not for his family).

For further information contact: Dr. James F. Morrison, 439 Grinter Hall, or Dr. William Sullivan, 433 Grinter Hall.

STUDY ABROAD (UTRECHT)

The University of Florida offers a foreign study program at the University of Utrecht in the Netherlands for its own and other undergraduates in the State University System of Florida. The 1975-76 program consisted of intensive Dutch language instruction during the Fall, together with several orientation sessions developed by Professor Jorge Martinez of the University's Mathematics department, who was Program Director. From January to June, 1976, the students took courses offered by University of Utrecht professors, some in the English language, others in Dutch. These were in several disciplines, such as sociology, English literature, economics, and psychology. In every case the University of Florida major departments worked with the student to guide his or her selection of courses and insure credit toward graduation. Credit is transferred to the student's record at his or her home university in the Florida system.

Clearly one of the advantages of the Florida Abroad at Utrecht program is the opportunity to experience Dutch and European culture directly by studying and living with foreign students.

The basic cost to participate in the program in 1975-76 was $1,465 to cover tuition, medical insurance, and nominal service charges. Trans-Atlantic travel, housing, food, and incidental expenses are the student's own direct responsibility. The estimated total expense for the entire 9-month period was $3,700.

In addition to the overseas Director, a Program Coordinator, Professor Samuel S. Hill, Jr., is available to assist. Further information may be obtained from the Coordinator (Department of Religion).

Additional approved foreign study programs administered by other units in the State University System are available to UF students. Locations include Florence, Haifa, London, and Paris. An Arts and Sciences student must complete at least one quarter's coursework in residence in Gainesville after participating in a foreign study program.

NEWS ITEMS

The College of Business Administration

ACCOUNTING
(See School of Accounting)
COMPUTER AND INFORMATION SCIENCES
ECONOMICS
FINANCE
INSURANCE
MANAGEMENT
MARKETING
REAL ESTATE

The College of Business Administration

GENERAL STATEMENT

The College of Business Administration of the University of Florida was organized in 1926-27. The divisions of the College are: School of Accounting; Department of Economics; Department of Finance, Insurance, Real Estate and Urban Analysis; Department of Management; Department of Marketing; and Bureau of Economic and Business Research.

The College of Business Administration has broad objectives; to provide the foundation for competent, responsible participation in business, the professions and government; to stimulate interest in social, economic and civic responsibilities; to develop competence in making business decisions and in evaluating policy; to offer fields of specialization in business or economics, and, especially, to encourage intellectual inquiry.

Specific arts and detailed information are necessary parts of the curriculum, but the guiding principle of this College is to stress broad fundamentals in terms of the above objectives, and to prepare the student to develop subsequent specialization. To this end, every curriculum of the College is constructed around a core of courses in economics and the major functional areas of business.

The College also has other functions. It contributes to knowledge through the research activities of its faculty and students. Graduate programs are provided for advanced students and prospective teachers in business administration and economics. The College participates in programs of adult education both on and off campus. It recognizes its responsibilities to students in other colleges of the University by giving them an opportunity to complement their education with courses in economics and business administration.

The College maintains a computer facility for instructional and research purposes. Advanced students also have access to the University Computing Center, which contains high-capacity equipment.

SCHOLARSHIPS AND ASSISTANTSHIPS

Scholarships are available for students in Business Administration. Full information about these scholarships may be obtained from the Director of Student Financial Aid, University of Florida, Gainesville, Florida.

Graduate assistantships and fellowships are available for students working toward the degrees of Master of Business Administration, Master of Arts, and Doctor of Philosophy. Information about these assistantships may be obtained from the Director of Graduate Studies, College of Business Administration, University of Florida, Gainesville, Florida.

BUREAU OF ECONOMIC AND BUSINESS RESEARCH

There is established in the College of Business Administration a Bureau of Economic and Business Research. One of the major purposes of this Bureau is to carry out research undertakings designed to contribute to economic and business knowledge, with primary emphasis upon the economy of Florida and the Southeast. A second major aim is the functional participation of the faculty members of the Bureau staff in the curriculum for graduate training offered by the College of Business Administration and in this way to provide opportunity for graduate students to engage in specific research projects. From time to time work is undertaken which permits a similar opportunity for undergraduate students.

The Bureau publishes the results of its research undertakings as these are completed. It also issues periodically a publication, *Economic Leaflets*, and *Business and Economic Dimensions*.

The Bureau is a member of the Associated University Bureaus of Business and Economic Research.

MEMBERSHIP IN NATIONAL AND REGIONAL ASSOCIATIONS

The College of Business Administration is a member of the American Assembly of Collegiate Schools of Business, the Southern Economic Association, the Southern Business Administrative Association and the National Retail Merchants' Association. Its baccalaureate and MBA programs are accredited by the American Assembly of Collegiate Schools of Business.

BETA GAMMA SIGMA

Election to this national honorary society is based on scholarship and character. It fills the place in education for business that the society of Phi Beta Kappa holds in the field of classical education. Duly elected members have the right to wear the *insigne* of the society — the Beta Gamma Sigma gold key. For further information apply to the Office of the Dean.

PROFESSIONAL ORGANIZATIONS AND CLUBS

There are five professional fraternities which elect members from students in the College of Business Administration. These are Alpha Kappa Psi and Delta Sigma Pi in commerce and business, Omicron Delta Epsilon in economics, Phi Chi Theta for business women, and Rho Epsilon in real estate. Several clubs also give students with specialized interest an opportunity to participate in their activities.

WOMEN IN BUSINESS

Rapidly increasing opportunities exist for women graduates in many business fields. Illustrative areas are marketing, banking, accounting, economic analysis, insurance, real estate, personnel administration, statistics and investments.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Business Administration encourages applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this college. It should be understood however that minimum requirements are given and that admission to this college is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objective, pattern of courses previously completed, quality of previous academic record, and test data will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested.

University College Students: To be eligible for admission to the College of Business Administration, a University College student must have completed at least one quarter in

University College. Acceptance to the College of Business Administration will be based upon the grade point average earned and prerequisite courses completed.

Transfer Students: To be eligible for admission to the College of Business Administration, a transfer student must satisfy the minimum requirements for admission that are set forth in the transfer admissions section below. Additionally, the applicant should complete, as far as possible, the courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the University College section. Completion of these courses and receipt of an AA degree does not guarantee acceptance to the College of Business Administration. Acceptance to the College of Business Administration will be based upon prerequisite courses completed and the student's earned grade point average.

A. Students attending four year colleges, who wish to transfer after two years, should follow a program of general education and preprofessional courses similar to the Basic Curriculum for the Freshman and Sophomore years for students desiring to enter the College of Business Administration which is outlined in the University College section of this catalog. Prerequisite courses in business subjects during the first two years should be completed as indicated in paragraphs B.3 and B.4 below. Courses should not be taken during the first two years which are offered only at the upper division level at the University of Florida.

B. Junior College and Community College students should:

1. Complete the university transfer program at the junior college.

2. Complete the general education requirements established for the junior college.

3. Complete, insofar as possible, all of the courses which are prerequisites to any advanced professional work in the College. For specific courses required for a given major, see listing in University College section of this Catalog.

4. Complete the one-year course in accounting and/or economics at the junior college. Differences in the order of presenting material in basic one year courses make it highly undesirable to take parts of such courses in different institutions.

5. Choose elective courses needed to complete the total 64 semester hours in the university transfer program from such areas as mathematics, natural sciences, social science, foreign language, and humanities.

6. Avoid professional coursework that is available at the University of Florida only as 3rd and 4th year courses. TRANSFER STUDENTS ARE ADVISED TO AVOID SUCH COURSES AS BUSINESS LAW, PRINCIPLES OF MARKETING, PRINCIPLES OF MANAGEMENT, PRINCIPLES OF INSURANCE, PRINCIPLES OF REAL ESTATE, PERSONNEL MANAGEMENT, PRINCIPLES OF FINANCE, AND COMPUTER MANAGEMENT COURSES. A maximum of six quarter credits may be allowed for courses taken during the first two years which are available only as third and fourth year professional courses in the College of Business Administration.

Any credit granted for such work will be in the form of undistributed elective credit without reference to specific courses taken, but in no case may such courses be in the student's major field. In the case where a student wishes to waive a core course and substitute a community college course, waivers may be granted on an individual basis but the student will be required to take another course in the area being waived. The course will be specified by the Department Chairman of the area.

Provisional Admission: Within space limitations, students who do not meet precisely the admission requirements indicated in the appropriate section above may be granted provisional admission to the College of Business Administration. The Dean of the College of Business Administration will specify the courses to be completed and minimum grade points to be earned by the student during the term of his provisional admission. Provisional status will be removed and the student fully admitted to the College of Business Administration provided he fulfills the conditions set forth in his provisional admission. The student will be excluded from further enrollment in the College of Business Administration if he fails to satisfy the conditions of his provisional admission.

GENERAL REGULATIONS

STUDENT RESPONSIBILITY: The student must assume full responsibility for registering for the proper courses and for fulfilling all requirements for his degree. He is also responsible for completing all courses for which he is registered.

Seniors must file formal application for a degree in the Office of the Registrar early in the quarter in which they expect to receive the degree. The official calendar shows the latest date on which this can be done.

NORMAL LOADS: The average course load in the College of Business Administration is 15 credit hours. A student may be permitted to register for additional hours if in the opinion of his academic adviser and the Dean, his academic record justifies this. Students who wish to take less than 12 hours should be aware that certain university privileges and benefits require a minimum registration. It is the student's responsibility to verify the minimum registration necessary for these benefits.

RESIDENCE: The last 45 quarter hours to be applied toward a degree must be completed in residence in the College of Business Administration. In special cases this requirement may be waived if the student has a 2.9 average or better, and his petition to take non-resident work has been approved in advance by the faculty of the College. In any case, no student may take more than nine quarter credit hours by extension or correspondence among the 90 quarter credits of upper-division work required for the baccalaureate degree; and such work must have prior approval for each individual student by the Petitions Committee of the College. However, courses to be included in the major field may not be taken by extension, by correspondence, or at another university for transfer.

SATISFACTORY-UNSATISFACTORY GRADE OPTION: An undergraduate student in the College of Business Administration may take on the S-U basis only those courses which will be counted as free electives in fulfilling the requirements for the BSBA degree.

PROBATION AND SUSPENSION: Students who do not make satisfactory academic progress may be excluded from further registration.

GRADUATION REQUIREMENTS:

To graduate from the College of Business Administration a student must satisfactorily complete the following:

1. 96 quarter hours of lower division requirement.

2. A College approved program in his major field of study.

3. Elective requirements outside the student's major field (a maximum of thirteen quarter hours may be specified by major department).

A minimum of 186 quarter hours is required for graduation. The waiving of any required course does not reduce the hours required for graduation. A student must maintain an overall average of 2.0 and a 2.0 average on all courses which count toward upper division degree requirements.

DEAN'S LIST AND GRADUATION WITH HONORS OR HIGH HONORS:

A student who carries 14 hours per quarter with a grade point average of 3.5 will have his name placed on the Dean's list for that quarter.

To graduate *With Honors*, a student must make at least a 3.2 average on all course work accepted as Upper Division credit *and* all course work (except as noted below) attempted while registered in the Upper Division. To graduate *With High Honors*, a student must make at least a 3.6 average on all work accepted as Upper Division credit *and* all course work (except as noted below) attempted while registered in the Upper Division. In calculating requirements for graduating *With Honors* or *With High Honors*, the following policies are followed: the student must have completed at the University of Florida at least 60 quarter hours for Upper Division credit toward a degree in Business Administration, transfer credits and S-U grade credits will be excluded; and credits for Lower Division courses taken while registered in the Upper Division will be excluded.

GRADUATE DEGREES AND ADMISSION TO GRADUATE WORK

Courses are offered in the College of Business Administration leading to the degree of Master of Business Administration, Master of Arts, and Doctor of Philosophy. For requirements for these degrees and for admission to Graduate School, consult the *Graduate School Catalog.*

CURRICULUM IN BUSINESS ADMINISTRATION

The upper division curriculum in Business Administration requires 90 quarter credits. The program centers around a core which is required of all students. In addition, each student is required to select one of the eight major fields as an area of concentration. The pattern of the Upper Division requirements is as follows:

UPPER DIVISION CORE REQUIREMENTS

Courses	Credits
QMB 3700 Quantitative Methods for Business and Economic Analysis	5
*ECO 3251 National Income Determination and Policy	5
*ECO 3100 Prices and Markets	3
FIN 3403 Business Finance	4
MAN 3010 Principles of Management	4
MAR 3023 Principles of Marketing	4
Total Core Requirements	25

*Students majoring in Economics are required to register for ECO 4205 and ECO 4101 instead of ECO 3251 and ECO 3100.

OTHER UPPER DIVISION REQUIREMENTS

In addition to the upper division core just described, each student must follow the curriculum pattern indicated below:

MAJOR FIELD

Required courses are listed under the appropriate "major" headings, beginning in the next section. Minimum requirements range from 18 to 28 hours depending upon major.

FREE ELECTIVES

Electives may be within or outside the College of Business Administration, but must be outside the major field. A maximum of thirteen hours may be specified by major department. Maximum of 9 credits in Advanced Military Science may be counted toward free elective credit.

I. ACCOUNTING

(For Bachelor of Science in Accounting Degree Requirements, See Listing Under School of Accounting).

II. COMPUTER AND INFORMATION SCIENCES

This curriculum is designed to prepare students for technical and managerial positions in science in public and private organizations. The curriculum emphasizes three aspects pertinent to the student's professional career; the functions to which computers are applied in organizations, the professional skills for the design of computing applications, and the decision-making techniques for the efficient and effective utilization of computing resources.

Courses	Credits
COP 4226 Data Processing Languages	4
CIS 4103 Info. Resources in Bus. and Economics	4
CIS 4321 Introduction to Management Systems	4
Balance of 14 to 16 credits in courses numbered above COC 3110	14-16
Total	26-28

Students majoring in CIS are required to take the following courses:

ACC 4741 Info. systems for Management Planning & Control	4
QMB 4703 Managerial Operations Analysis III	4
Free electives in the College of Business Administration or elsewhere	29-31
Total	37-39

III. ECONOMICS

This curriculum is designed to provide students with a basic core of courses in Economics, while, at the same time, enabling them to select their electives from among a wide variety of courses adapted to their needs and interests.

The economics major is required to substitute ECO 4205 and ECO 4101 for ECO 3251 and ECO 3100 in the College of Business core program. In addition, the major must complete 18-28 credit hours of economic electives elected from courses numbered 3000 or above. Three courses must be selected from the list below. At least two of these courses must be selected from Group 1, but one course may be selected from Group II.

Group I	Credits
ECO 3213 Money and Banking	4
ECO 3703 International Economics	5
ECO 4935 Senior Seminar in Economics	3
ECO 4504 Public Finance	4
ECO 4403 Government Regulation of Business	5
Group II	
ECO 4633 Development of Modern Western Economy	5
ECO 4634 Development of Modern Western Economy	5
ECO 4622 United States Economic Development	5

For further information, contact a departmental adviser, Room 110, Matherly Hall.

IV. FINANCE

This curriculum is designed to give students a broad background in the business finance function with emphasis on analysis and the decision making process. The curriculum

provides a general academic base in finance which can be useful for decision-makers in all aspects of business as well as more specialized courses that may be of interest to those students considering careers in commercial banking or other types of financial institutions.

Courses	Credits
•FIN 4244 Money and Capital Markets	4
FIN 4414 Business Finance Topics	4
FIN 4504 Investments	4
and two of the following four courses:	
•FIN 4313 Financial Management of Financial Institutions	4
•FIN 4424 Applied Business Finance	4
•FIN 4514 Investment Analysis	4
•FIN 4604 International Finance	4
Total	20

•Students are advised to complete the quantitative requirements before registering for these courses. The student is required to take the following courses as a part of "electives":

BUL 4100 or BUL 4112 Business Law	5
COP 3110 Introduction to Computer Programming	2
and a minimum of four additional hours of Business Administration courses	4
Required Electives	11

V. INSURANCE

The primary objective of the curriculum in risk and insurance is an understanding of risk—its varied forms, sources, and methods of treatment. The orientation of the curriculum is the analysis, decision making, and comparative institutional choice inherent in the management of personal, commercial, and social risks.

The courses provide useful background for business and non-business majors alike, whose interests require an understanding of the nature of risk and its treatment. Students who major in this program would seek positions in the administration of risk management programs of business and government as well as positions in the insurance industry.

The major consists of a minimum of 18 credits in the field of risk and insurance and may not exceed 24 credits. The major must include RMI 3015, at least one course from both Group A and Group B, plus RMI 4914 for 2 credits.

Courses	Credits
RMI 3015 Risk and Insurance	4
•RMI 4914 Independent Research	2
Group A:	
RMI 3206 Property and Liability Insurance 1	5
RMI 3207 Property and Liability Insurance 2	5
RMI 4305 Risk Management	5
Group B:	
RMI 3105 Life Insurance	4
RMI 4120 Health Insurance	4
RMI 4135 Group Insurance and Pension Plans	4
RMI 4805 Estates, Trusts, and Insurance	4
Total	18-24

•The independent work will consist of a research paper. Before registering for the course the student must submit a topic outline acceptable to a majority of the members of the insurance faculty.

Students majoring in insurance are required to take the following courses as a part of "electives":

BUL 4100 or BUL 4112 Business Law	5
COP 3110 Introduction to Computer Programming	2
Required Electives	7

VI. MANAGEMENT

This curriculum is designed for students interested in overall management problems, industrial management, industrial relations or personnel management. By selection of appropriate courses, a student may obtain a solid basis of quantitative analysis of business and/or organizational behavior.

Courses	Credits
MAN 3150 Foundations of Organizational Behavior	4
MAN 4201 Principles of Organization	4
MAN 4310 Problems in Personnel Management	4
QMB 4703 Managerial Operations Analysis 1	4
and three additional courses from among the following:	
MAN 4052 Management Philosophy and Practice	4
MAN 4109 Applications of Organizational Behavior	4
MAN 4410 Collective Bargaining	4
MAN 4600 International Management	4
MAN 4720 Business Policies	4
QMB 4701 Managerial Operations Analysis 1	4
QMB 4702 Managerial Operations Analysis 2	4
Total	28

Students majoring in Management are required to take the following course:

SPECIFIED ELECTIVE	
COP 3212 Computer Programming Using FORTRAN	2
Specified Electives	2

VII. MARKETING

This curriculum is designed to develop an understanding of the marketing and distribution system for goods and services, the social and economic forces which act on that system and on the determinants of consumer choice behavior. The program emphasizes quantitative and social science approaches to marketing management and consumer behavior.

Courses	Credits
MAR 3503 Consumer Behavior	4
MAR 4613 Marketing Research	4
MAR 4713 Marketing Management	4
and any three or four of the following courses:	
MAR 3203 Marketing Channels	4
MAR 4153 Retail Management	4
MAR 4213 Physical Distribution Management	4
MAR 4243 International Marketing	4
MAR 4303 Promotion Management	4
MAR 4403 Sales Management	4
MAR 4614 Advanced Marketing Research	4
MAR 4763 Credit and Collections	4
MAR 4933 Special Topics in Marketing	4
Total	24-28

Students majoring in Marketing are required to take the following course:

COP 3110 Introduction to Computer Programming	2
Required Electives	2

VIII REAL ESTATE

This curriculum is designed to prepare students as real estate analysts. With this background graduates can enter a real estate business, a real estate department of a regional or national firm, a financial institution, or a state or federal governmental agency. Many graduates enter a specialized branch of real estate such as appraising, investment analysis, consulting, property management, mortgage lending, or marketing. The program stresses the use of modern concepts and technology in the solution of practical real estate problems.

COLLEGE OF BUSINESS ADMINISTRATION

Courses	Credits
REE 3043 Real Estate Analysis	5
REE 4100 Real Estate Valuation	4
REE 4204 Real Estate Financial Analysis	4
REE 4310 Real Estate Investment	4
REE 4430 Real Estate Law	4
REE 4704 Urban Land Use Analysis	4
Total	25

The student is required to take two courses from the following list, totaling at least 7 hours.

Course	Credits
ANT 2402 Anthropology and Modern Life	5
BCN 1210 Construction Materials	4
EGN 4822 Engineering and Public Works	3
ECP 5614 Urban Economics Prereq.: ECP 2013-2023 and permission	5
FOR 2003 Introduction to Forestry	3
GEO 3270 Geography of Florida	4
GEO 4124 Air Photo Interpretation Prereq.: GEO 3200 or permission	5
GEO 3602 Urban Geography	4
MAR 3503 Consumer Behavior Prereq.: MAR 3023	4
MAR 4613 Marketing Research Prereq.: MAR 3023, QMB 3700	4
POS 3144 Urban Politics Prereq.: POS 2041	5
Required electives	7-10

College of Dentistry

The College of Dentistry is one of the six colleges which constitute the J. Hillis Miller Health Center. The College of Dentistry, as well as the other units of the Health Center, is an integral component, both geographically and functionally, of the University of Florida. Many conjoint projects between the College and other units of the Health Center and University have been formulated and implemented.

The 1957 Florida Legislature authorized the development of a College of Dentistry in Gainesville, but it was not until the late 1960's that faculty members were recruited and program development initiated.

The thirteen departments which make up the College of Dentistry are Basic Dental Sciences, Community Dentistry, Dental Biomaterials, Dental Education, Endodontics, Occlusion and Fixed Prosthodontics, Operative Dentistry, Oral Medicine, Oral Surgery, Orthodontics, Pedodontics, Periodontics, and Removable Prosthodontics. A modular curriculum has been developed in which these several departments teach in a multidisciplinary fashion. The curriculum is so designed as to permit students the maximal degree in flexibility and individualization in their program. It is a competency based curriculum in which behavioral objectives, rather than time, serve as the primary guidelines for student advancement. Although there is no definite length of time in the curriculum, it is planned so that outstanding students should be able to complete the program in approximately three calendar years. Self-instruction constitutes a significant part of the teaching methodology.

The institutional goals of this College are to prepare the graduate to enter private dental practice, to enter graduate programs of any of the dental specialties, to enter into research activities, and to be prepared for a lifetime of continuing education.

The first class of students graduated in 1976. The Dental Sciences Building was first occupied in August, 1975, and was officially dedicated March 6, 1976. The College offers the Doctor of Dental Medicine (D.M.D.) degree. (The D.M.D. and D.D.S. degrees are synonymous.) The College presently offers Advanced Educational Programs (residencies) in Oral Surgery, Oral Pathology, Orthodontics, Periodontics and Dental Public Health. In addition, a one year General Practice residency program is available.

The College of Dentistry aspires to attract students of the highest caliber into its various programs. High standards of scholastic achievement, moral character, and motivation are expected of the applicant. The student of dentistry must possess a high basic aptitude supplemented by an academic preparation of the highest order because of the vast area of science which must be mastered by the dentist. The highly personal relationship between patient and dentist places the latter in a position of trust, which demands maturity, integrity, intellectual honesty, and a sense of responsibility. A broad representation of the ethnic mixture of the state is sought in the student body through an active recruitment program. The College strictly adheres to the principle of ethnic, racial, religious and social equality among its student body and faculty.

Generally, students applying for admission should plan to complete the requirements for a bachelor's degree. However, qualified students may be accepted without fulfilling the degree requirements, provided they show evidence of sufficient academic preparation and the personal characteristics necessary for the study of dentistry. Applicants with an overall B average as a minimum will receive strongest consideration for admission to the College of Dentistry. A limited number of out-of-state students, in proportion to the number in the University as a whole, may be admitted. Applicants should initiate the application process approximately fifteen months prior to anticipated enrollment by submitting an application through the centralized American Association of Dental Schools Application Service (AADSAS), P. O. Box 4000, Iowa City, Iowa 52240.

Futher detailed information will be found in the College of Dentistry Bulletin. Copies may be obtained by writing to the Office of Admissions, College of Dentistry, University of Florida, Box J-445, JHMHC, Gainesville, Florida 32610.

ADMINISTRATION AND SUPERVISION
COUNSELOR EDUCATION
FOUNDATIONS
GENERAL TEACHER EDUCATION
INSTRUCTIONAL LEADERSHIP AND SUPPORT
SPECIAL EDUCATION
SUBJECT SPECIALIZATION TEACHER EDUCATION

College of Education

GENERAL STATEMENT

The College of Education, a professional college, has as its purpose the preparation of qualified personnel for positions in service, leadership, and research in education.

The College has undergraduate programs leading to the preparation and certification of teachers in elementary education, secondary education, and K-12 programs in art, music, physical education and special education (mental retardation). Programs of study in guidance and counseling, school administration, and college teaching are available at the graduate levels only. Undergraduate students interested in these areas will usually complete their bachelor's degree in one of the teaching fields found on the following pages.

Class room teaching is only one of the many careers available to graduates from the College of Education. School administrators, supervisors, counselors, school social workers, school psychologists, attendance workers, speech therapists, and reading clinicians are among the many careers found in education. Other career opportunities for those having degrees in education are in the areas of development and distribution of educational materials, educational television, personnel work, counseling, foreign service, peace corps, as educational specialists and training officers in industry, and in educational research.

The University of Florida teacher education programs are designed to assist students with developing three broad areas of competence: (1) *general preparation* consisting of a background of liberal education; (2) the *professional sequence* consisting of work in psychological and social foundations of education, the school program, and internship or student teaching; and (3) the *teaching field* or specialization in the area of subject matter to be taught.

The College of Education is fully accredited by the National Council for Accreditation of Teacher Education. Graduates from approved programs in teacher education are granted certification to teach in thirty-one (31) states as a recognition of this accreditation.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Education encourage applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this College. It should be understood, however, that minimum requirements are given and that admission to this College is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record, including educational objectives, pattern of courses previously completed, quality of previous academic record, and test data, will be considered in evaluating an application for admission. Priority for admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested.

Limitations in available faculty and facilities have made it necessary that the College of Education establish quotas for the admission of new students in certain undergraduate programs. Therefore, eligible applicants will be considered for admission to the College of Education within established quotas.

University College Students: University College students should apply for admission to the College of Education during the quarter in which they are completing 96 hours of work. Applications should be filed in both the Registrar's Office and the College of Education Office of Student Services, Room 134 Norman Hall. Because of the increasing number of applications and because of limitations in staff and facilities, the College of Education limits the number of admissions to a prescribed quota. To be considered for admission to the College, students will be required to:

1. Complete one of the basic programs outlined in the University College section of the catalog under Education. University College students with transferred credit from other institutions will be required to take comprehensive courses according to the University College regulations.
2. Applicants presenting the best overall credentials in terms of grade point average and other predictive indices are given first priority. When quotas are filled, no additional students can be accepted.
3. Meet minimum standards of physical and mental health.
4. Have the approval of the Committee on Admission of the College of Education. The Committee will review the application of each candidate with respect to qualities considered to be essential for effective teaching. The student is expected to speak and to write the English language effectively.

Transfer Students:

A. From other upper division colleges, University of Florida

University of Florida students desiring to transfer from an upper division college to the College of Education must file applications with both the Registrar's Office and the College of Education Office of Student Services. To be considered for admission applicants will be expected to meet the requirements for admission outlined above for University College students.

B. From other institutions

To be eligible for admission to the College of Education, a transfer student must satisfy the minimum requirements for admission to an Upper Division College that are set forth in the ADMISSIONS section of the catalog. Additionally, the applicant must satisfy the following specific requirements for admission to the College of Education:

1. Complete a personal data sheet for permanent records in the College of Education.
2. Meet general preparation requirements (See General Preparation section for College of Education).
3. Applicants presenting the best overall credentials in terms of grade point average and other predictive indices will be given first priority. When quotas are filled, no additional students can be accepted.
4. Meet minimum standards of physical and mental health.
5. Have the approval of the Committee on Admissions of the College of Education. The Committee will review the application of each applicant with respect to qualities considered to be essential for effective teaching. The student is expected to speak and write the English language effectively.

The following information will serve as a guide in expediting transfer of a junior college student to the College of Education in compliance with the above requirements. The junior college transfer student must:

1. Complete the Associate of Arts degree program at the junior college.
2. Complete the general education requirements established for the junior college.
3. Present a satisfactory academic record. Since quotas have been established in certain teaching areas, those students presenting the best overall records will be given first priority.
4. Avoid courses in professional education. All required professional education courses must be taken in the College of Education.

In addition to the above requirements, students are advised to:

5. Complete work in the following areas:

	Semester Hours
English Composition	6

Social Sciences 6
Humanities 8
*Mathematics 3
Science (to include work in both physical and biological sciences) 10

*Students planning to major in childhood education must have two courses in mathematics, to include at least one course specifically designed for elementary school teachers. If a student is unable to take a mathematics course for elementary teachers at the junior college, it may be taken after admission to the University. Under any circumstances, one mathematics course should be successfully completed at the junior college.

6. Choose elective courses to complete the required 64 semester hour total in the university transfer program in the basic areas of general or liberal education fields. Students majoring in secondary education may earn credit in their teaching field at the junior college in courses which are equivalent to the 1000 and 2000 level courses at the University of Florida. Students enrolling in the College of Education are not required to take a foreign language. Students who enroll in Teacher Education in the College of Arts and Sciences must satisfy the foreign language requirements of that College.

7. Complete a course in public speaking.

Provisional Admission: Due to limited faculty and facilities, the College is not able to accept all students who meet its minimum admission requirements. Therefore, the College does not provide provisional admission at the present time.

ADMISSION TO PHASES OF THE TEACHER EDUCATION PROGRAM

I. Admission to the Teacher Education Program for students enrolled in the College of Arts and Sciences.

Students in the College of Arts and Sciences who wish to enroll in a Teacher Education Program must make application for admission to the program. Application forms may be obtained in Room 113 Anderson Hall or Room 134 Norman Hall.

Application should be made as soon as possible after admission to the College of Arts and Sciences; application to the program cannot be made before a student has been accepted into the College of Arts and Sciences. The student must be admitted to the Teacher Education Program before he can apply for the Advanced Professional Sequence.

The criteria used in considering students from the College of Arts and Sciences for the Teacher Education Program will be the same as those used for admitting students into the College of Education.

II. Admission to the Advanced Professional Sequence

A student who proposes to enter a Teacher Education Program, whether through the College of Education or one of the cooperating colleges, must be admitted to the Advanced Professional Sequence prior to enrollment in certain professional courses. For K-12 Education programs this is EDE 4203 and ESE 4001; for Secondary Education this is ESE 4001, for Special Education this is at the time of enrollment for the second methods course, and for Childhood Education this is prior to the fourth quarter in the program.

Admission to the Advanced Professional Sequence requires:

1. A special application submitted to the College of Education Office of Student Services, Room 134 Norman Hall, no later than one month prior to the proposed registration for the courses indicated above. Admission to the College of Education is not to be interpreted as automatic admission to the Advanced Professional Sequence.

2. Enrollment in an upper division college.

3. Completion of the general preparation requirements. (See General Preparation).

4. Completion of the speech requirement by successfully completing a public speaking course or by passing the speech screening examination administered by the Speech Department. All English, Language Arts and Health Education, students must meet this requirement by completing the speech course.

5. A "C" average, or better.

6. A "C" average, or better, in specific professional courses in the area of specialization.
Special Education majors, and Secondary Education majors in either the College of Education or the College of Arts and Sciences should note that no grade less than "C" meets a requirement in the professional education courses or in the field of specialization.

7. Students in Elementary Education and Early Childhood Education must complete successfully a reading screening examination.

III. Admission to Student Teaching in any Teacher Education Program

Assignments to student teaching for each quarter are made by the College of Education Office of Student Services. Students in the College of Education are assigned a quarter for student teaching when they are admitted to the College. Students from the College of Arts and Sciences are assigned a quarter for student teaching when they are admitted to the Teacher Education Program. Students in other colleges should see the Coordinator of Undergraduate Studies, Room 134 Norman Hall, for a student teaching quarter as early in their junior year as possible. Assignments are made on the basis of a quota which is usually filled at least one year in advance.

Prior to acceptance to student teaching in a Teacher Education Program, a student must have fulfilled the following requirements:

1. Have completed all general preparation requirements.

2. Have satisfied the speech requirement.

3. Have at least a "C" average in all course work at the University of Florida, the area of specialization courses, and professional education courses. Foreign Language majors must demonstrate proficiency in all languages for which they seek certification.

4. Have been admitted to the Advanced Professional Sequence and have completed the following work:

(a) Early Childhood Education — MUE 2402 and MUE 3401; HES 3301 and PET 3461; ENG 4161; EDE 3800, and RED 4147

(b) Elementary — MUE 2402 and MUE 3401; HES 3301 and PET 3461; ENG 4161; EDE 3804; and RED 4147

(c) Teaching Fields K-12 — EDF 3110; EDE 4203; ESE 4011; at least two-thirds of the coursework in the teaching area in which student teaching is to be done and the following courses:

Art: ARE 4242, ARE 4243

Health Education: HES 2000, 2001, 3301, 3322, PET 3320, and APB 2170

Music: MUE 3113, 3320, 3030, 4412, 4411 or 4404

Special Education: EEX 3010, EMR 3011, EEX 3222, EMR 4201, 4202, 4230, 4204, 4214

Physical Education: PET 3461 and 4442

(d) Secondary other than Business Education — At least 24 hours in education, including EDF 3135, ESE 4011, 4210, and a methods course in the area of specialization, and at least two-thirds of the coursework in the teaching area in which student teaching is to be done.

(e) Business Education — EDF 3135; ESE 4011; 4210; BTE 4068, 4364, 4360, and at least two-thirds of the coursework in the area of specialization.

Students must make special application to the Director of Student Teaching, Room 146 Norman Hall. Applications must be received no later than October 1 for the Winter Quarter, January 10 for the Spring Quarter, and April 1 for the Fall Quarter.

Students have the responsibility for making arrangements to live in the community where student teaching is to be

done and to assume living expenses in addition to regular on-campus expenses.

GRADUATION REQUIREMENTS

To graduate from the College of Education a student must satisfactorily complete the following:

1. 59 quarter hours of general preparation.
2. A College approved program in his major field of study.
3. Required professional education courses appropriate to his field of study.
4. Speech requirement.

A minimum of 188 quarter hours is required for graduation. A student must maintain at least a 2.0 overall grade point average and have at least a 2.0 average in all professional education courses and in his area of specialization. In the departments of Subject Specialization and Special Education, grades below "C" will not fulfill requirements in either professional education or in the area of specialization.

GENERAL PREPARATION

The minimum requirements in general preparation for majors in Elementary and Early Childhood are:

	Quarter hours
Social Sciences	9
English Composition	9
Humanities	12
Physical Sciences: and*	15
Biological Sciences	
Mathematics: MAE 3810, 3811	6
Electives in general preparation	8

The minimum requirements in general preparation for all undergraduate Education Programs other than Elementary Education and Early Childhood Education are:

	Quarter hours
Social Sciences	9
English Composition	9
Humanities	12
Physical Sciences	15
Biological Sciences	
Mathematics	4
Electives in general preparation	10

*Five of the six comprehensive science courses or appropriate substitutes are required.

University College students making substitutions and using transfer credit from other institutions will be required to take comprehensive courses according to University College regulations. Students transferring into the upper division of the College of Education as Juniors and Seniors are expected to have completed comparable comprehensive courses or to have taken appropriate substitutes.

PROFESSIONAL EDUCATION

Early Childhood Education Programs Include:	Credits
EDE 3800	50
EDE 4943	16
RED 4147	4
Elementary Programs Include:	
EDE 3804	50
EDE 4943	16
RED 4147	4
Special Education (Mental Retardation) Programs Include:	
EDF 3110	5
EDF 3514 or 3604 or 4542 or 4710	5
EEX 3010, EMR 3011, EEX 3222, EMR 4201, 4202, 4230, 4204, 4214	35
EEX 4861	16
Music Education Programs Include:	
EDF 3122 or EDF 3135 or EDF 3110	5
EDF 3514 or 3604 or 4542 or 4710	5
EDE 4203 and ESE 4011	9
EDE 4943 and ESE 4943	16
Other Kindergarten through Twelfth Grade Programs Include:	
EDF 3110	5
EDF 3514 or 3604 or 4542 or 4710	5
EDE 4203 and ESE 4011	9
ESE 4943 (Physical Education) (Art)	16
EEX 3010 and EEX 4141 (Speech Therapy)	8
Secondary Education Programs Include:	
EDF 3135	5
EDF 3514 or 3604 or 4542 or 4710	5
ESE 4011	5
ESE 4210 and an appropriate methods course	9
ESE 4943 or EVT 4940	16
Elective in Education (College of Education students only)	3-5

ACADEMIC ADVISORY SERVICES

To assist students in their educational and vocational planning the College of Education maintains an Advisory Panel composed of faculty members representing the various teaching fields. In addition to the Advisory Panel other advisory facilities include the College of Education Office of Student Services, and the Placement Service in the Reitz Union.

GENERAL REGULATIONS

PLANNED PROGRAMS

Before the end of the first term of enrollment in the College of Education, the students should plan a program for the remainder of work required for his degree. All planned programs must have the approval of the student's counselor and the Coordinator of Undergraduate Studies.

Each student is responsible for registering for the proper courses and fulfilling all requirements for his degree. Courses can be dropped or changed without penalty *only* upon approval of the counselor, the College of Education Office of Student Services, and the Registrar.

LOADS

Sixteen quarter hours is considered a normal load. A student may be permitted to register for additional hours if, in the opinion of his counselor, the quality of his record justifies this. At the time of registration, a student, with the approval of his counselor, may register for less than sixteen quarter hours if conditions warrant this.

DEADLINES

Graduating Seniors must file an application for a degree in the Office of the Registrar early in the quarter in which they expect to receive the degree. The University calendar shows the latest date on which this can be done.

Students applying to enter the Advanced Professional Sequence must file an application in the College of Education Office of Student Services 30 days prior to registration in these courses.

Student teaching applications are available from the Director of Student Teaching, Room 146, Norman Hall and are due October 1 for Winter student teaching, January 10 for Spring student teaching, and April 1 for Fall student teaching.

RESIDENCE

The last 45 quarter hours to be applied toward a degree must be completed in residence in the College of Education. In special cases this requirement may be waived by petition when a student has completed most of his previous work in upper division of the College of Education.

No part of the teacher preparation program can be taken by correspondence, home study, or extension unless such courses have been planned with the student's upper division counselor and approved by the College of Education Office

of Student Services. In addition to these requirements University regulations pertaining to correspondence and extension work apply to College of Education students.

PETITIONS

If a student feels that the College regulations cause a peculiar hardship or injustice in his case, he may petition for waiver of the particular regulation. The student should contact his adviser or the College of Education Office of Student Services regarding this procedure.

UNDERGRADUATE REGISTRATION IN GRADUATE COURSES

With the permission of the instructor, an undergraduate student in the College of Education may enroll in 5000 or 6000 level courses if he has Senior standing and an upper division grade point average of at least 2.8. His registration during any term for which he is enrolled in a graduate course may not exceed 17 hours. Graduate fees are charged for 5000 and 6000 level courses.

MUSIC ENSEMBLE CREDIT

Undergraduate majors in education may count only 6 hours of music ensemble credit toward graduation.

DEGREES OFFERED

The degrees Bachelor of Arts in Education and Bachelor of Science in Education are offered in the College of Education. The Bachelor of Science in Education Degree is granted to students whose area of specialization is in science, mathematics, or business education; other curricula lead to the Bachelor of Arts in Education Degree.

HONORS

To graduate from the College of Education with honors, the student will be required to earn on all college work an academic average of 3.2 for honors and an average of 3.5 for high honors. He must have earned at least 90 credits, with the appropriate average, at the University of Florida.

Kappa Delta Pi (men and women) and Pi Lambda Theta (women) are honor societies in education. Membership is by invitation.

SCHOLARSHIP AND LOANS

The College of Education Office of Student Services has information about very limited scholarship and loan funds available in the College of Education. Information regarding other financial aid of undergraduate students may be obtained from the Office of Student Financial Aid.

TEACHER CERTIFICATION

Applications for Florida teacher certification are available in the College of Education Office of Student Services, 134 Norman Hall.

ART EDUCATION

Florida teachers are certified to teach art in kindergarten through the twelfth grade. Students may enroll in either the College of Fine Arts or the College of Education.

Students should complete ART 1201-1203 — Beginning Design — ART 1300-1301 — Beginning Drawing and Painting, ART 2205-2302 — Intermediate Drawing and Painting, ART 2050-2051-2052 Introduction to the Principles and History of Art while in University College.

JUNIOR YEAR

Courses	Credits
ART 2280 Lettering	4
ART 2110 Beginning Ceramics	4
EDF 3110 Human Growth and Development	5
EDF 3514, 3604, 4542, 4710	5
ARE 4242 Professional Studies in Art Education	5
*Art Electives	8
EDE 4203 Elementary School Today	4
ESE 4011 Secondary School Today	5
Total	40

SENIOR YEAR

Courses	Credits
ARE 4243 Professional Studies in Art Education	5
ARE 4244 Professional Studies in Art Education	6
EDE 4943 The Practicum; K-12	16
ART 3701 Sculpture	4
*Art Electives	9
ART 3400 Printmaking	4
Total	44

*Art electives must include such advanced courses as are necessary to complete state certification requirements and must include a minimum of three closely related courses in a single advanced area (fine arts, crafts, advertising design, etc.)

AUDIOLOGY AND SPEECH PATHOLOGY

Students desiring to specialize in Audiology and Speech Pathology may enroll in either the College of Arts and Sciences or the College of Education. The undergraduate program is pre-professional and requires a minimum of 62 quarter hours of Speech. No grade below "C" meets a requirement in this program.

Information about the Audiology and Speech Pathology programs may be obtained through the Department of Speech, 442 Arts and Sciences Building, or the Office of Student Services, 134 Norman Hall. Students in the College of Arts and Sciences must confer with their adviser prior to admission to the Division of Audiology and Speech Pathology.

Majors are expected to complete approximately 50 hours of acceptable speech pathology-audiology courses, 28 hours of education courses and 15 hours of related area courses. They are expected to work out a planned program with their Speech Department advisor which, when signed by the student, the Speech Department advisor and the College of Education advisor will constitute the student's contract for graduation.

To qualify for the certificate of Clinical Competence in Audiology or Speech Pathology awarded by the American Speech and Hearing Association or to obtain endorsement by the College of Education and the Department of Speech for the State Department of Education certification in Speech Correction or Hearing Disabilities, it is necessary to complete a master's degree or equivalent.

BUSINESS EDUCATION

(Broad Field).

In addition to completing all general preparation requirements, students should complete, while registered in the University College, as many of the following courses as possible: ACC 2001, Elementary Accounting; ECE 2013-2023, Basic Economics. Any of these courses not completed in the University College must be taken in the upper division. A total of 62 quarter hours in the teaching field is required.

Basic competencies in shorthand and typewriting are required for this program. Students anticipating entering this area should contact the office of Student Services, Room 134, Norman Hall, or the section chairman of business education regarding more details relative to the shorthand and typewriting competencies.

No course in which the grade is below "C" meets a requirement in this program

JUNIOR YEAR

Courses	Credits
*BTE 3365 Office Procedures for Teachers	4
*BTE 3367 Office Machines and Data Processing for Teachers	4
*BTE 4762 Competencies In Business Education	4
BUL 4101-4121 Business Law	5
FIN 3303 Financial Institutions	5
EDF 3135 The Adolescent	5
EDF 3514 History of Education in the United States	5
or	
EDF 3604 Social Foundations of Education	
or	
EDF 4542 Philosophy of Education	
or EDF 4710 Comparative Education	
ENC 3351 Business Communications	4
Electives in Teaching Field	9
Total	45

*Taken as a block

SENIOR YEAR

Courses	Credits
ESE 4011 The Secondary School Today	5
*ESE 4210 Secondary School Curriculum and Organization	4
*BIE 4068 Principles of Business Education	4
*BTE 4364 Methods and Materials for Teaching Office Education Subjects	4
*BTE 4360 Methods and Materials for Teaching Bookkeeping and Basic Business Subjects	4
EVT 4940 Student Teaching in Vocational, Technical, and Adult Education	16
BUL 4305 Business Law	4
EVT 3365 Principles of Vocational Education	4
Electives in Teaching Field	4
Total	49

BUSINESS EDUCATION

(Bookkeeping and Basic Business Subjects)

In addition to completing all general preparation requirements, students should complete, while registered in the University College, the following: ECE 2013-2023, Basic Economics, and ACC 2001-2301, Elementary Accounting. A total of 62 quarter hours in the teaching field is required. No required course in which the grade is below "C" meets a requirements in this program.

JUNIOR YEAR

Course	Credits
FIN 3303 Financial Institutions	5
EDF 3135 The Adolescent	5
EDF 3514 History of Education in the United States	5
or	
EDF 3542 Philosophy of Education	
or	
EDF 3604 Social Foundations of Education	
or	
EDF 4710 Comparative Education	
BUL 4101 or 4121 Business Law	5
RMI 3015 Risk and Insurance	5
*BTE 3365 Office Procedures for Teachers	4
*BTE 3367 Office Machines and Data Processing for Teachers	4
*BTE 4762 Competencies in Business Education	4
Electives in Teaching Field	10
Total	47

*To be taken as a block

SENIOR YEAR

Course	Credits
ESE 4011 The Secondary School Today	5
*ESE 4210 Secondary School Curriculum and Organization	4
*BTE 4068 Principles of Business Education	4
*BTE 4364 Methods and Materials for Teaching Office Education	4
*BTE 4360 Methods and Materials for Teaching Bookkeeping and Basic Business Subjects	4
EVT 4940 Student Teaching in Vocational Technical and Adult Education	16
BUL 4305 Business Law	4
Electives in Teaching Field	5
Total	46

*To be taken as a block

GENERAL TEACHER EDUCATION

The Early Childhood Education and Elementary Education Programs are innovative approaches to the professional preparation of educators. The program is based upon four major assumptions: that a person learns best when (1) learning is made personally meaningful and relevant, (2) learning is adjusted to the rate and needs of the individual, (3) there is a great deal of self-direction, and (4) there is a close relationship between theory and practice.

Aside from the 20 quarter hours of required courses listed below which are taken outside the College of Education, there are no courses as such in the Early Childhood Education and Elementary Education Programs. Instead, each quarter in the program, the student enrolls in the appropriate section of professional studies in education (EDE 3800 or 3804), for a variable number of hours to total 50 by the completion of the program. In addition, the student will register for a total of 16 quarter hours in EDE 4943—Student Teaching in the Elementary School.

Each quarter the professional studies will comprise participation in a *seminar* — a small discussion group which gives continuity and direction to the program by providing students with a place to share their meanings and problems in interaction with their peers while building a personal educational belief system; (b) *study of content* selected from among the following areas (each of which must be mastered by graduation) curriculum, language arts, math, reading, science, social studies, art, human growth and development, music and social foundations. In each area, students pace their own progress, attend special lectures, participate in small study groups or workshops, and pursue independent study; c) an *appropriate field experience* carried out in a local public or private school or community agency.

Students' work within the program is graded on a Satisfactory-Unsatisfactory (S-U) basis. The student continues his work in a given learning area until he demonstrates satisfactory competence in the area.

EARLY CHILDHOOD EDUCATION

(Nursery School and Kindergarten)

The program in Early Childhood Education will provide academic and field learning activities which place emphasis on the years between three and six, but extending downward to infancy and upward to age eight, including the areas of pre-natal, parenting and family development education. The six-quarter professional program for early childhood education includes:

	Credits
1) Professional Studies in Childhood Education (EDE 3800)	50
2) EDE 4943 — Student Teaching in the Elementary School	16
3) RED 4147	4
4) Courses taken outside the College of Education:	
MUE 2402 — Music Skills	4
MUE 3401 — Music for the Elementary Child	5
PET 3461 — Teaching Physical Education in the Elementary School	3
HES 3301 — Elementary School Health Program	4
ENG 4161 — Children's Literature	4
4) Additional elective hours as necessary to meet the graduation requirement of 188 quarter hours, and to have	

at least 122 quarter hours outside the Childhood Education Program.

ELEMENTARY EDUCATION

(Grades one through six)

The program in Elementary Education will provide academic and field learning activities which place emphasis on the development and teaching of the child from age six through age twelve.

The six quarter professional program for elementary education includes:

	Credits
1) Professional Studies in Elementary Education (EDE 3804)	50
2) EDE 4943 — Student Teaching in the Elementary School	16
3) RED 4147	4
4) Courses taken outside the College of Education:	
MUE 2402 — Music Skills	4
MUE 3401 — Music for the Elementary Child	5
PET 3461 — Teaching Physical Education in the Elementary School	3
HES 3301 — Elementary School Health Program	4
ENG 4161 — Children's Literature	4
5) Additional elective hours as necessary to meet the graduate requirement of 188 quarter hours, and to have at least 122 quarter hours outside the Childhood Education Program.	

LANGUAGE ARTS

This is a joint program with the College of Arts and Sciences and leads to certification in English, Speech and if the student chooses, Journalism. The student may choose an English, Speech or Drama emphasis. Nine hours of Journalism course work will add Journalism to the professional certificate. No course in which the grade earned is below "C" meets a requirement in this program.

English emphasis: Required are a minimum of 39 hours in English and 28 to 29 hours of Speech, depending on the choice of courses.

Speech emphasis: Required are a minimum of 36 to 37 hours of Speech, depending on the choice of courses, and 27 quarter hours of English.

Drama emphasis: Required are a minimum of 40 to 45 hours of Speech, depending on the choice of courses, and 27 quarter hours of English.

REQUIRED COURSES:

	Emphasis	Minor
English		
English Literature - Survey*		
ENL 2031, 2033, 2034, 2042	8	
American Literature**		
AML 2020, 2021, 3113, 4210, 4301, ENG 3221 3222, 4745	8	
Shakespeare		
ENL 4135, 4136	4	
Period Courses***		
ENG 3451, ENL 4331 or 4341, 4351 or 4352, 4403 or 4404, 4413 or 4415, ENL 4111	8	
English Language Study		
ENG 3500, 3511, 3551, LIN 4400	8	4
Advanced Composition****		
CRW 3230, 3330, ENC 3464, 3532, 4542	3	3
Approved English electives		20
	39	27

*In exceptional cases, one or both of the survey courses may be waived if the counselor deems the student's background to be adequate but the total number of hours of English may not be lowered.

**One of these courses should be in contemporary American Literature; otherwise, an additional course must be taken from among the following: ENG 3222, 3315, 3462, 3463, 4748, ENL 3451, LIT 3162, 4131.

***In exceptional cases other English courses may be substituted for the period courses with the counselor's approval.

****MMC 2100 may be used by Education majors, but not by Arts and Sciences majors, to satisfy the advanced composition requirement, but the total number of hours in English may not be lowered.

Speech	Emphasis	Minor
SPC 2300 or 3601	4 to 5	4 to 5
ORI 2001 or SPC 2260	3 to 4	3 to 4
SPC 3420 or 3440 or 3513	4	4
SPA 3001	3	3
Speech electives	12	8
SED 4335	4	
THE 4730 or 4760	4	4
	34 to 36	26 to 28

Drama Emphasis	
SPC 2300 or 3601	4 to 5
ORI 2001 or 2002 or SPC 2260	4
SPC 3420 or 3440 or 3513	4
SPA 3001	3
TPA 3060, 3200, 3220	8
TPP 3110, 3310	4 to 8
THE 3950 or TPA 3220	4
SED 4335 or THE 4730	4
THE 4760	4
Total	38-44

Journalism	
MMC 2100	4
JOU 4800	5
Total	9

ENGLISH SPECIALIZATION

This is a joint program with the College of Arts and Sciences and leads to certification in the single subject of English at the secondary level. Basic requirements include a *minimum of 39 quarter hours* of English and 8 quarter hours of Speech above the basic general education requirements. Additionally, 16 quarter hours of electives to complement the major in English are required. The electives may include additional English course work. No course, either required or approved elective, in which the grade earned is below "C" meets a requirement in this program.

REQUIRED COURSES:

	Credits
*English Literature — Survey	
ENL 2031, 2034	8
**American Literature	
AML 2020, 2021, 3113, 4210, 4301, ENG 3221, 3222, 4745	8
Shakespeare	
ENL 4135, 4136	4
***Period Courses	
ENG 3451, ENL 4331 or 4341, 4351 or 4352, 4403 or 4404, 4413 or 4415, ENL 4111	8
English Language Study	
ENG 3500, 3551, 4511, LIN 4400	8
****Advanced Composition	
CRW 3230, 3330, ENC 3464, 3532, 4542	3
Total	39

*In exceptional cases, one or both of the survey courses may be waived if the counselor deems the student's background to be adequate, but 39 hours of English are still required.

**One of these courses should be in contemporary American literature; otherwise, an additional course must be taken from among the following: ENG 3222, 3315, 3462, 3463, 4748, ENL 3451, LIT 3162, 4131.

***In exceptional cases, other EH courses may be substituted for the period courses with the counselor's approval.

****MMC 2100 may be used by Education majors, but not by Arts and Science majors, to satisfy the advanced composition requirement, but 39 hours of English are still required.

Speech	*Credits*
SPC 2300 or 3601	4-5

Speech Elective 4
(Normally ORI 2001 or SPC 2260 is the most appropriate choice and should be scheduled unless there is a definite reason for selecting another course.)
Approved electives: Not more than two courses in foreign language may be used to satisfy this requirement 16

ENGLISH-RELIGION

This is a joint program with the College of Arts and Sciences for certification for secondary school teaching in English and Religion. Students may enroll in either the College of Education or the College of Arts and Sciences. No course in which the grade earned is below "C" meets a requirement in this program.

ENGLISH MAJOR

Same as courses required in English Specialization program.

RELIGION MINOR

Courses totaling 24 hours in Religion, encompassing work in (a) World Religions; (b) Bible (c) History of Religion in the West; and (d) Religion in America. Typically this would be fulfilled by choosing a suitable distribution among the following: (a) REL 3330-3340; (b) REL 3202, 3210, 3244, 3245; (c) REL 3321, 3500, 3611; (d) REL 3121, 3122, 3130, 3322. Depending on the student's total academic program, other RN courses may be substituted with approval of the student's adviser.

FOREIGN LANGUAGE

This is a joint program with the College of Arts and Sciences and leads to certification in a foreign language. Students may enroll in either the College of Education or the College of Arts and Sciences.

Basic requirements for certification in a single modern foreign language include a minimum of 36 quarter hours above the second year college level, plus LIN 3142, making a total of 40 quarter hours. Course work should include the following areas: conversation, grammar and composition, linguistics, culture, and literature.

Students who wish certification in a second foreign language must complete 27 quarter hours in that language. No course in which the grade earned is below "C" meets a requirement in this program.

HEALTH EDUCATION/DRIVER EDUCATION AND SAFETY

This is a joint program with the College of Physical Education, Health and Recreation and is designed to prepare students (1) to become teachers of health and related health sciences; and (2) to serve as coordinators of school health education programs.

Admission: In addition to general education requirements for health education majors specified in the University College, students should have completed the following courses while registered in the lower division:
HES 2000 Personal and Family Health, 4 credits
HES 2001 Community and Environmental Health, 4 credits
HES 2400 First Aid and Personal Safety, 3 credits
No course in which the grade earned is below "C" meets the program requirements.

JUNIOR YEAR

APB 2170 Microbiology 3
APB 2170L Discussion Laboratory in Microbiology 2
EDF 3110 Human Growth and Development 5
EDF 3604 Social Foundations of Education 5
HES 3144 Health Education and Medical Terminology ... 3
HES 3296 Field Experience in Community Health 3
HES 3301 Elementary School Health Program 4
HES 3431 School and Community Safety Education 3
PET 3320 Applied Human Anatomy 4
PET 3350 Applied Human Physiology 4
Electives for concentration area(s) 14

Total 50

SENIOR YEAR

EDE 4203 The Elementary School Today 4
ESE 4011 The Secondary School Today 5
ESE 4210 Secondary School, Curriculum and Organization 4
ESE 4943 Student Teaching 16
HES 3322 Health Education in Secondary Schools 4
HES 4510 Consumer Health 3
HES 4540 Drug Education 3
HES 4561 Sex Education 3
SCE 4330 Special Methods for Teaching Science 5
Electives for concentration area(s) 3

Total 50

CERTIFICATION IN DRIVER EDUCATION AND SAFETY EDUCATION

The following courses are provided for those wishing to add Driver and Safety Education to their Florida Teaching Certificate:
HES 3431 School and Community Safety Education, 3 credits
HES 4450 Driver and Traffic Safety Education, 4 credits
HES 4451 Teaching Driver and Traffic Safety Education, 4 credits

MATHEMATICS

This is a joint program with the College of Arts and Sciences. Students may enroll in either the College of Education or the College of Arts and Sciences. No course in which the grade earned is below "C" meets a requirement in this program.

REQUIRED COURSES

	Credits
MAC 3311, 3312 and 3313	15
MTG 3212 and 3213	6
MAS 3301 and 3302, or 4311 and 4312	6

ELECTIVE COURSES:

COC 3110 or EIN 3114, MAE 4830, 4831, 4870, MAS 3203, 4313, MHF 4404, MTG 3214, STA 3023 or 4321, or 4404, and other mathematics courses chosen with the advice of the counselor 13

Total 40

MIDDLE SCHOOL EDUCATION

The Middle School Education Program is a 16 quarter hour block composed of ED 601, 4 quarter hours and ED 604, 12 quarter hours. Upon successful completion of the program, students will be eligible for Middle School certification in one of the following areas: Language Arts, Mathematics, Science, or Social Studies.

Students interested in Middle School Education should be aware of the extensive prerequisites to this program. These prerequisites include:

1. A course in Reading
2. The successful completion of an undergraduate program in Early Childhood, Elementary, or Secondary Education.
3. At least 15 Quarter hours beyond general preparation requirements in Language Arts, Mathematics, Science or Social Studies.

Specific subject area requirements include:

LANGUAGE ARTS

Grammar: One course from among ENG 3500, ENG 3551, LIN 4400
Composition: One course among ENC 3464, MMC 2100

One course from each of two of the three following areas:
1. AML 2021, AML 3113
2. LIT 3321, ENG 4165
3. SPC 3440, SPC 3601

MATHEMATICS

Required: MAE 3810, 3811, 3812, 3822, 3823.

Electives: MHF 4404, CAP 3800, MGF 2202, MHF 3202, MAS 3203, STA 3013, STA 3023, STA 4404.

SCIENCE

Chemistry: CHM 2040 or 2041 or 2045 or 2046.
Biology: BSC 2012, or ZOO 2010 or 2011.
Physics: PHY 1001 or PHY 2032.
Geology: GLY 2015 or GLY 2100.

SOCIAL STUDIES

At least one survey course in American History.

At least one survey course in the history of one of the following world areas: Western Europe, Russia, Africa, Latin America, Asia.

At least one course from each of two of the following Areas: Anthropology, Political Science, Geography, Sociology, Economics, Social Psychology.

Additional information about the Middle School Program can be obtained in Room 134, Norman Hall.

MUSIC EDUCATION

The College of Education and the College of Fine Arts offer a joint program leading to certification in music education for teaching in kindergarten through twelfth grade. Students may enroll either in the College of Education or the College of Fine Arts.

Students should complete MUT 1111, 1112, 1113, 1241, 1242, 1243, 2116, 2117, 2118, 2246, 2247, 2248 — Theory of Music, six credits in ensemble, and eighteen credits in applied music above the 100 level while in the University College.

Piano Skills MVK 2111, 2112, 2113, 2121, 2122, 2123 must be taken each quarter until piano proficiency examination is passed; requirement must be met before application for Student Teaching.

JUNIOR YEAR

Music Performance Area	*Credits*
Applied Principal, including recital	6
MVK 2123 Piano Skills	1
MUE 2440, 2450, 2460 Instrumental Skills	6
Ensemble	3
Courses	
MUH 3211, 3212, 3213 History of Music	12
MUE 3310, 3330 Music Education	10
EDF 3122, 3135, or 3110 Education	5
Three courses from PSC 1502, 1510, 1420, APB 2150, 2151, 2153	9
Total	52

SENIOR YEAR

Music Performance Area	*Credits*
MUE 2470 Percussion Skills	2
MUG 4101 Conducting	4
Courses	
MUE 4412 or 4411 or 4404 or 4343 Materials and Administration	4
EDF 3514, 3604, 4542 or 4710 Foundations of Education	5
EDE 4203 Elementary School Today	4
ESE 4011 Secondary School Today	5
MGF 1113 and approved electives in science	10
Teaching Internship	
EDE 4943, ESE 4943 Student Teaching	16
Total	50
Total minimum credits	198

PHYSICAL EDUCATION

The College of Education and the College of Physical Education, Health, and Recreation offer joint programs to prepare men and women physical education teachers. While enrolled in the University College all students should complete as many as possible of the following required courses: (See College description of curriculum requirements)

DAE 2320, 2360
HES 2000, 2400
PEO 1011, 1511, 1521, 2031, 2032, 2121, 2341, 2561, 3621
PEP 1301, 2201, 2401, 2421
PEQ 1121
PET 3320, 3350, 3590, 3940, 3944
SPC 2300 or 3601

UPPER DIVISION COURSE REQUIREMENTS

General Professional Physical Education Core:

	Credits
PET 3011 Foundations of Physical Education	3
PET 3127 American Physical Education and Sport	3
PET 3340 Kinesiology of Motor Skills	3
PET 3360 Physiology of Exercise and Training	3
PET 3381 Theories of Skill Acquisition and Motor Development	3
PET 3640 Adapted Physical Education with Lab	3
PET 4510 Measurement and Evaluation with Lab	3
PET 4622 Prevention and Care of Athletic Injuries	3

Professional Physical Education Teaching Core:

	Credits
PET 4415 Administration of Physical Education	4
PET 4442 Physical Education in the Secondary School	5

Professional Education Core:

	Credits
EDE 4203 The Elementary School Today	4
EDF 3110 Human Growth and Development	5
EDF 3604 Social Foundations of Education	5
ESE 4011 The Secondary School Today	5
ESE 4943 Student Teaching	16

Elementary School Specialization:

	Credits
DAE 3370 Rhymthic Activities for Elementary School Children	3
PEO 3041 Games and Sports for Elementary School Children	3
PEP 3203 Educational Gymnastics for Elementary School Children	3
PET 3430 Physical Education Program in the Elementary School	3
PET 4941 Field Experience in Elementary School Physical Education	3

Secondary School Specialization:

	Credits
PEO 3213 Officiating III	1
PEO 3323 Officiating I	1
PEO 3623 Officiating II	1
PET 3461 Physical Education in the Elementary School	3

Coaching Concentration: (a non-degree program)

	Credits
PEO 3323 Officiating I or PEO 3623 Officiating II or PEO 3213 Officiating III	1
PET 3212 Foundations and Principles of Coaching	3
PET 3340 Kinesiology of Motor Skills	3
PET 3360 Physiology of Exercise and Training	3
PET 3381 Theories of Skill Acquisition and Motor Development	3
PET 4416 Administration of Athletics	3
PET 4622 Prevention and Care of Athletic Injuries	3
PET 4949 Practicum in Coaching	2-6

Selected coaching courses from the following courses:
Baseball, Basketball, Football, Golf, Gymnastics, Soccer,

Softball, Swimming and Diving, Tennis, Track and Field, Volleyball, and Wrestling.

PSYCHOLOGY EDUCATION

The Psychology specialization leads to the certification to teach Psychology at the high school level. Students may enroll in either the College of Education or the College of Arts and Sciences. No course in which the grade earned is below "C" meets a requirement in this program.

	Credits
Professional Education Requirements:	
EDF 3135	5
EDF 3514 or 3604 or 4542 or 4710	5
ESE 4011	5
ESE 4210	4
SSE 4333	5
ESE 4943	16

	Credits
PSYCHOLOGY REQUIREMENTS:	
A. Introductory Level	
PSY 2013	4
B. Foundation Level	
Two courses from the following:	
CBH 3003, EAB 3002, EXP 3604, PSB 3004	8
Two courses from the following:	
DEP 3002, PPE 3004, SOP 3304	8
STA 3023	4
C. Intermediate and Advanced Level	
Psychology 300, 400 and 500 level courses	minimum 12

Other Requirements:

A. 20 hours of History including two courses of U.S. History and two courses other than U.S. History.

B. A course in each of two other fields from among the fields of Anthropology, Economics, Political Science, Geography and Sociology.

SCIENCE EDUCATION PROGRAMS BIOLOGY

The biology specialization leads to certification to teach biology at the high school level. Students may enroll in either the College of Education or the College of Arts and Sciences. No course in which the grade earned is below "C" meets a requirement in this program.

Course	Credits
Mathematics:	
MAC 3311	5
Biology:	
*BOT 1020 and ZOO 2010 or	
**BOT 2021 and ZOO 2010, 2011	12-14
***BOT 3503 or PCB 5745	4-5
BOT 3153 and ZOO 3203, or ZOO 3303 and 3203	8-10
PCB 3033, PCB 4040 or 5046	5
AGR 3303, 3305 or PCB 3060	5
MCB 3013	5
Chemistry:	
***CHM 2040, 2041, 2042, 2043 or CHM 2045, 2046, 2047 or CHM 2055, 2056 -10-12	
BCH 3023 or CHM 3200	5
Physics:	
PHY 1001 or PHY 2050, 2051 and 2052	6-15
Total	66-78

Recommended Electives: BCH 4203, 4313, 5051L; ENY 3003; GLY 2015, 2100; PCB 3253, 3673, 574S; ZOO 3203, 3303, 3803.

*Transfer students with a year of Biology should not take BOT 1020

**ZOO 2010 and CHM 2041 or 2045 are prerequisites for ZOO 2011.

***CHM 2040 does not count in total credits required in this program.

CHEMISTRY

The chemistry specialization leads to the certification to teach chemistry at the high school level. Students may enroll in either the College of Education or the College of Arts and Sciences. No course in which the grade earned is below "C" meets a requirement in this program.

Course	Credits
Mathematics: MAC 3311, 3312	10
Chemistry:	
*CHM 2040, 2041, 2042, 2043, or CHM 2045, 2046, 2047 or CHM 2055, 2056	12-15
CHM 3200, or CHM 3210, 3211	6-10
CHM 3400, 3401	8
CHM 3120	5
Physics:	
PHY 2040, 2041, 2042, or PHY 2050, 2051, 2052	12-15
Total	53-60

Recommended Electives:
GLY 2015, 2100; MAC 3302, 3313, 3314, PHY 3123, 3423, 4224, 4822.

*CHM 2040 does not count in major requirements.

EARTH SCIENCES IN THE JUNIOR HIGH SCHOOL

This specialization prepares teachers to teach the earth sciences and general science in the junior high school. Students may enroll in either the College of Education or the College of Arts and Sciences to pursue their degree. No grade less than "C" meets a requirement in this program.*

Course	Quarter Hours
Mathematics:	
MAC 1132	5
**Geology:	
GLY 2014, 2100 and five of the following:	
GLY 4155, 4200, 4210, 4301, 4400, 4511, 4610, OCE 4005	28
MET 2701, 3711; AST 1002, 2005, 3015, 3016, 3082	8-10
Physics:	
PHY 1001	6
Chemistry:	
CHM 1020, 1021 or CHM 2040, 2041, 2042 or CHM 2045, 2046	8-12
Total	55-61

Recommended Electives: CHM 2043, 2047, GLY 5704, MET 3100.

*Students taking this program will take chemistry and physics instead of PSC 1420, 1510, 1502.

**This major in Geology is a Science Education major, not a Professional Geology major.

PHYSICS

The Physics specialization leads to the certification to teach Physics at the high school level. Students may enroll in either the College of Education or the College of Arts and Sciences. No course in which the grade earned is below "C" meets a requirement in this program.

Course	Credits
Mathematics:	
MAC 3311, 3312, 3313	15
Chemistry:	
*CHM 2040, 2041, 2042, 2043, or CHM 2045, 2046, 2047	12
Physics:	
PHY 2040, 2041, 2042	12
PHY 3123, 3223, 3323, 4712, 4822	16
AST 2005, 3015, 3016, 3082; PHY 4124, 4224, 4324, 4424	6
Total	61

Recommended Electives: Any course in Physics at the 400 or 500 level not used to satisfy the above programs; GLY 2015, 2100, MAP 3302.

*CHM 2040 does not count in total credits required in this program.

**This major in physics is a Science Education major, not a Professional Physics major.

SOCIAL STUDIES SPECIALIZATION

This is a joint program with the College of Arts and Sciences. Students may enroll in either the College of Education or the College of Arts and Sciences.

A minimum of 63 hours in social science beyond the basic general education course is required. No course in which the grade earned is below "C" may be counted in these 63 hours.

A student may elect to concentrate in one of the following social sciences: anthropology, economics, geography, history, political science, or sociology. For those majoring in a field other than history, 20 hours of history are required. The student who elects the program outlined below will be eligible for teacher certification in social studies if his distribution includes credit in at least four separate social studies subjects. A student should plan a program, in consultation with his adviser, which includes the following minimum requirements:

	Credits
Major field (Anthropology, Economics, Geography, History, Political Science, or Sociology)	36
*History (to include at least two courses of U.S. History and two courses other than U.S. History)	20
Social Science Electives	16
Total	72

*For students majoring in History, the required 20 hours in History may be a part of the 36 hour major.

**Nine quarter hours of the total may be basic general education course credits. This may be either CSS or transferred social science credit that is not otherwise used in the teaching field.

SPECIAL EDUCATION

The bachelor's degree in special education, with a major area of concentration in mental retardation, is offered through the Department of Special Education.

No course in which the grade earned is below "C" meets a requirement in this program.

Required Upper Division Courses	*Credits*
Introduction to Special Education EEX 3010, EMR 3050, SPA 3300	11
Foundations of Education EDF 3110 (or 3122 or 3135 or 4144) and EDF 3604 (or 3514 or 4542)	10
Special Education EEX 3840, EMR 4201, EMR 4202, EMR 4204, EMR 4214, EMR 4230	29
Student Teaching — EEX 4861	16
Core Electives ART 3100, EDF 4430, EED 4011, EGC 4033, EIA 3280, EIA 3291, EME 4102, EME 4201, EMR 4330, HES 2400, HES 3431, HES 4450, HES 4451, LIN 3206, LIN 3711, STA 3013, STA 3023, VEC 3200	12

Major fields of concentration in other areas of special education are available only at the graduate level. Students interested in such areas as learning disabled, emotionally disturbed, and/or physically handicapped children should consult with staff members in special education concerning electives at the undergraduate level.

OTHER PROGRAMS

Students in the College of Education and other colleges may have individual program planned by selecting one or two areas from fields not listed or combinations which do not appear as regular programs in teacher education.

Programs provided for in this section will be worked out by the student and his adviser on an individual basis. Such individual programs must be approved by the Deans of both Colleges. The planning of combination programs will take into account the personal and educational objectives of the student, the relationship between the fields in the proposed combination, the certification requirements of the state, and the employment possibilities which the combination being considered offers. For combination programs preparation must include a minimum of 36 quarter hours above any comprehensive or general education courses in a field and 27 quarter hours, exclusive of general education courses, in the second. This assumes that the two fields are essentially related as to supplement each other. If the two fields are essentially unrelated 36 quarter hours will be required in each. A guide to the specific courses required in each field may be found in the regular Arts and Sciences-Education programs. No courses in which the grade earned is below "C" meets a requirement in these programs.

PROGRAMS IN HIGHER EDUCATION

Students planning careers in higher education will find many opportunities for professional improvement at the University of Florida. The College of Education, working with other instructional units of the University, provides opportunity for a variety of professional careers in teaching and administration in colleges and universities, in community colleges, and in area vocational-technical centers.

Of special interest are programs designed for those persons interested in joining state and regional staffs with responsibilities for coordinating and state level planning for higher education. The design of these programs emphasize both preservice preparation and inservice improvement in the areas of teaching, counseling and other student personnel services, administration and research in all types of post high school institutions. Additional emphasis is placed upon the leadership responsibilities and the roles of those who will become staff members of coordinating boards of regional agencies.

Students in the College of Education may concentrate their higher education program in any one of the five departments: Administration, Curriculum and Instruction, Counselor Education, Foundations of Education, and Special Education.

All course work is at the graduate level and will lead to one of the degrees listed in the following section.

All programs are individually planned to meet the specific needs of the individual candidate. His past experiences, present stated needs, and professional goals are basic to the development of the program of studies for the individual.

A variety of internship experiences are available for the advanced graduate student to acquire additional teaching, counseling and/or administrative experience in higher education. The internships are voluntary in nature and are designed to meet particular student needs.

GRADUATE EDUCATION DEGREES AND FIELDS OF SPECIALIZATION

Five graduate degrees are offered in the College of Education: the Master of Education, the Master of Arts in Education, the Specialist in Education, Doctor of Education, and Doctor of Philosophy.

Specialization at the master's and/or advanced degree level is possible in the following fields:

Administration

School Administration K-12
Business Management
Higher Education Administration
Community College Administration

Colleges

COLLEGE OF EDUCATION

Community Education
Administration of Special Education
Administration of Vocational Education

Instructional Leadership and Support
Educational Media
Reading, including Bi-Lingual Education
Vocational, Technical, and Adult Education—including Health Occupations Ed.
Post-Secondary Education
Supervision & Curriculum

Subject Specialization Teacher Education
Art Education
Music Education
Business Education
Science Education
Language Arts Education
Foreign Language Education
Mathematics Education
Social Studies Education

General Teacher Education
Early Childhood Education
Elementary Education
Middle School Education

Counselor Education
School Counseling
Agency Counseling
Higher Education Personnel
Counseling Psychology
School Psychology

Foundations
Psychological Foundations
Social Functions
Research Methodology

Special Education
Mental Retardation
Emotional Disturbance
Learning Disabilities
Multiple Handicapped
Speech Pathology

AEROSPACE ENGINEERING
AGRICULTURAL ENGINEERING
CERAMICS ENGINEERING
CHEMICAL ENGINEERING
CIVIL ENGINEERING
COMPUTER AND INFORMATION SCIENCES
ELECTRICAL ENGINEERING
ENGINEERING GRAPHICS
ENGINEERING SCIENCES
ENGINEERING TECHNOLOGY
ENVIRONMENTAL ENGINEERING SCIENCES
INDUSTRIAL AND SYSTEMS ENGINEERING
LAND SURVEYING
MECHANICAL ENGINEERING
METALLURGICAL ENGINEERING
NUCLEAR ENGINEERING SCIENCES
ENGINEERING COMMON COURSES

College of Engineering

GENERAL STATEMENT

The engineer engages in creative design and construction, in research and development — serving as the bridge between human needs and the storehouse of theoretical knowledge. He applies science to the common purpose of life, coupling science with the management of men, money, machines, and materials. Engineering is a profession which challenges the individual, stimulating his ingenuity and resourcefulness, and yielding a rewarding sense of creative accomplishment.

The engineer deals with real problems in the real world. This requires a thorough knowledge of mathematics and the sciences as well as an understanding of the legal, economic, and social restrictions of contemporary society. The engineer must be able to communicate his judgments, plans, and decisions whether rendered orally or in writing. This communication must be precise and clear. He must have enough knowledge in his professional field and in allied subjects to be able to work with other engineers, scientists and technicians, to fulfill his engineering assignments. Above all, he must discharge his duties as a responsible citizen.

Engineering is a demanding and difficult area of human endeavor, but an eminently rewarding one, requiring the exercise of the highest mental attributes and adherence to uncompromising standards of ethics and professional integrity. Although the engineer must possess the precise logical skills of the mathematician and scientist, his ultimate dependence upon his own considered judgment is a characteristic unique to engineering.

The field of engineering had been thought of almost exclusively as a man's domain. In the past few years, however, increasing numbers of women have been entering this field and are taking their places in the profession on an equal footing with men.

The various curricula of the College of Engineering are designed to give the student suitable education for his entry into the profession of engineering. The undergraduate programs are founded on mathematics and the natural sciences. Additional emphasis is placed upon the humanities and social sciences to develop the beginnings of sound judgment, perspective and curiosity. Many graduates continue their formal education at the postgraduate level and work towards the master's and doctor's degree to qualify for research, administration or teaching. The student must realize, however, that education does not stop with the completion of a degree program. The truly professional engineer never stops learning.

The curricula of the College of Engineering are planned to encompass these objectives and to provide a wide range of students choice in the selection of a professional degree objective. The Department represents the organizational element within the College of Engineering which encompasses both the academic and administrative responsibilities for baccalaureate study. The Departments with baccalaureate degree responsibilities are:

Agricultural Engineering Department
- Bachelor of Science in Engineering (Agricultural Engineering)

Chemical Engineering Department
- Bachelor of Science in Chemical Engineering
- Bachelor of Science (Chemical Engineering)

Civil Engineering Department
- Bachelor of Science in Civil Engineering
- Bachelor of Land Surveying

Computer and Information Sciences Department
- Bachelor of Science (Computer and Information Sciences)

Electrical Engineering Department
- Bachelor of Science in Electrical Engineering

Engineering Sciences Department
- Bachelor of Science in Engineering (Aerospace Engineering)
- Bachelor of Science in Engineering (Engineering Science)

Environmental Engineering Sciences Department
- Bachelor of Science (Environmental Engineering Sciences)
- Bachelor of Science (Environmental Engineering)

Industrial and Systems Engineering Department
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Engineering (Systems Engineering)

Materials Science and Engineering Department
- Bachelor of Science in Engineering (Metallurgical Engineering)
- Bachelor of Science in Engineering (Ceramic Engineering)
- Bachelor of Engineering Technology (Metals joining)

Mechanical Engineering Department
- Bachelor of Science in Mechanical Engineering

Nuclear Engineering Sciences Department
- Bachelor of Science in Engineering (Nuclear Engineering)
- Bachelor of Science (Nuclear Engineering Sciences)

In addition the College of Engineering offers a program in Interdisciplinary Engineering Studies, administered by the Dean's Office, and leading to the Bachelor of Science (Interdisciplinary Engineering Studies) degree.

For information relative to graduate degrees in engineering refer to other sections of this catalog, or the Graduate School catalog.

The Engineer's Council for Profession Development has accredited programs in the College of Engineering leading to the following degrees:
- Bachelor of Science in Engineering (Aerospace Engineering)
- Bachelor of Science in Engineering (Agricultural Engineering)
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Engineering (Engineering Sciences)
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Engineering (Systems Engineering)
- Bachelor of Science in Engineering (Metallurgical Engineering)
- Bachelor of Science in Engineering (Ceramic Engineering)
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Engineering (Nuclear Engineering)
- Master of Engineering with a major in one of the following programs:
  - Ceramics Engineering
  - Civil Engineering
  - Coastal and Oceanographic Engineering
  - Environmental Engineering
  - Mechanical Engineering

The General Plan of Study

The curricula leading to the various Bachelor's degree in Engineering are organized into a carefully developed sequence. The aggressive, strongly motivated student with proper high school preparation can negotiate this curriculum successfully within 13 quarters by carrying loads of 16 hours. The majority of students will require more than 13 quarters.

Many students, for different reasons, are not prepared to enter directly into the prescribed curriculum. For example, a student may have attended a high school which did not offer all the preparatory courses necessary for the entry into an engineering program. Or, possibly the student changed his career objective late in his high school program and did not as a result complete the usual high school preparation required of potential engineering students. In all such cases the student must expect that it will increase the time required to complete degree requirements.

As a general rule, subjects basic to all fields of engineering are studied while the student is in the first two years or in a community or junior college pre-engineering curriculum. Then, when professional study is undertaken in the College of Engineering, the individual characteristics and interests of the student are given consideration in the development of a program of studies most beneficial to him.

REQUIREMENTS FOR ADMISSION

The College of Engineering encourages applications from qualified male or female students from all cultural, racial, and religious groups. Specific requirements for admission to this college are listed below.

Direct Admission: The requirements for admission to the College of Engineering are shown in the Admissions section of this catalog.

University College Students: A student in a University College may request transfer at any time to the College of Engineering.

Transfer Students: Students who have not completed an AA degree at a community or junior college are eligible to transfer into the College of Engineering provided they meet the requirements shown for Admission as a Freshman under the Admissions section of this catalog.

Community and Junior College Students completing the AA degree should:

1. Satisfy the general education requirements established for the junior college.
2. The course work listed below is recommended:
   a. A program in mathematics through analytic geometry and calculus — 20 quarter hours.
   b. A program in chemistry including general chemistry and qualitative analysis — 12 quarter hours.
   c. General Physics (with calculus) with Laboratory — 12 quarter hours.
   d. Engineering Graphics — 3 quarter hours.
3. Choose elective courses in fulfilling the required total hours in the college-parallel program from the general education subjects and from the following:
   a. Differential equations (ordinary equations and transform methods).
   b. Statics, Engineering Mechanics if the course includes vector algebra.
4. Avoid Technical Education Courses since they are acceptable as part of the program only if they are demonstrated to be equivalent to required courses at the University. This does not apply to students who plan to enter the Engineering Technology program.

FRESHMAN AND SOPHOMORE REQUIREMENTS

The following program is designed for those students whose high school preparation meets the criteria shown under Engineering in the University College section. All Freshmen are required to consult with a College of Engineering adviser in planning their academic programs.

High school records and test scores are reviewed and a program of study commensurate with the student's academic capabilities is assigned. This work-load may range from a minimum of 12 to as much as 20 credit hours per quarter. A student of above-average academic capabilities and a high order of motivation should be able to carry 15-16 credits each quarter and should thus be able to earn a bachelor's degree in 13 quarters. If he pursues this academic program for three quarters each year it will take him/her four years and one quarter of the fifth year to earn his/her B.S. degree.

Some of the General Education requirements shown below may be satisfied through the College Level Examination Program (CLEP).

Courses	Credits
American Institutions	9
Comprehensive English	9
*Humanities	12
EGN 1002 Introduction to Engineering	1
CHM 2045, 2046 General Chemistry	8
***CHM 2047 or Biological Science Elective	4
MAC 3311, 3312, 3313, 3314 Analytic Geometry and Calculus	20
EGM 3311 Introduction to Engineering Analysis or MAP 3302 Elementary Differential Equations	3
PHY 2040, 2041, 2042 General Physics with Calculus	9
PHY 2040L, 2041L, 2042L Physics Laboratory	3
**EIN 3114 Computer Programming for Engineers	3
Physical Education	2
****Electives	4
Total	87

*This requirement may be deferred to the Junior or Senior year and approved departmental courses taken instead. The courses offered by the Humanities prospectus on the professions program are recommended.

**Students entering Chemical Engineering take ECH 3841. EIN 3114 is not required in the CIS program.

***Students in Chemical Engineering and Environmental Engineering Sciences are required to take CHM 2047.

****Civil Engineering students are required to take only 3 hours of elective for a total of 86 hours.

AGRICULTURAL ENGINEERING

The agricultural and food industry is the largest single industry in the United States and in Florida. The gowth of agriculture and technology have proceeded together and now agricultural production and processing industries require advanced machines and systems. The industries providing these machines and the related systems require engineering skills which agricultural engineers provide. The agricultural engineer is also involved in natural resources conservation in his drainage and watershed hydrology activities.

Agricultural engineering is unique in its concern for the engineering problems of biological production and processing. The agricultural engineer solves the engineering problems associated with agriculture such as the conversion of the sun's energy into biological (food) products using soil nutrition resources and water in controlled ways. He uses his basic engineering training combined with knowledge of agricultural and biological systems to design functional machines and equipment to process and handle these products so that quality is enhanced. No challenge could be greater and more rewarding than that related to food production and processing in view of the population explosion and projected world food shortage.

The education of the agricultural engineer includes basic physical and engineering sciences and also courses in biology, soils, plant science and animal science. The courses in agricultural engineering unify the concepts learned into a practical ability to solve a broad range of problems confronting the agricultural and food industry.

Agricultural engineers have numerous career opportunities in various segments of the large Florida agricultural industry and with manufacturers of equipment and supplies for agriculture throughout the nation. Agricultural engineers are sought by state and federal agencies for careers in irrigation, drainage and water resource management and pollution control. Excellent opportunities are available for graduate study. This program is offered cooperatively with the College of Agriculture.

Degree programs: The Agricultural Engineering Department offers the following degrees: Bachelor of Science in Engineering (Agricultural Engineering), Master of Engineering, Master of Science, and the Engineer Degree.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING (AGRICULTURAL ENGINEERING)

Courses	Credits
Pre-Engineering Program	83

Biological Science Requirement 1	5
EGN 1111C Engineering Graphics	3
ESI 3502 Numerical Techniques	2
EGM 3511 Engineering Mechanics, Statics	4
EGM 3400 Engineering Mechanics, Dynamics	3
EGM 3520 Strength of Materials	4
EGM 3803 Fluid Mechanics	4
or	
ECI 3213 Hydraulics 1 (4)	
EEL 3003 Elements of Electrical Engineering	5
EML 3100 Thermodynamics	5
EMA 3010 Materials	4
or	
ECI 3403 Civil Engineering Materials (4)	
ECI 3515 Engineering Measurements 1	2
SOS 3022 General Soils	5
STA 3032 Engineering Statistics	3
Animal Science Requirement	3
Plant Science Requirement	3
AGE 4012 Analytical and Professional Methods Agricultural Engineers	4
AGE 4612 Heat and Mass Transfer in Biological Systems	4
AGE 4312 Agricultural Structures Proc. Equipment and Operations*	5
AGE 4632 Engineering Principles of Plant and Animal Environment	4
AGE 4232 Drainage and Irrigation Engineering	4
AGE 4112 Agricultural Tractors and Power Units	3
AGE 4121 Agricultural Field Machines	5
*Electives	31
Total Credits	202

*A minimum of 20 elective credits specifically selected in consultation with the Departmental adviser, to support the student engineering objective is required.

CHEMICAL ENGINEERING

Although chemical engineering has existed as a field of engineering for only about sixty years, its name is no longer completely descriptive of this dynamic, growing profession. For the work of the chemical engineer is neither restricted to the chemical industry nor limited to chemical changes or chemistry. Instead, modern chemical engineers, who are also called *process* engineers, are concerned with *all* the physical and chemical changes that matter is made to undergo to produce economically a product or result that is useful to mankind. More than most fields, the education of the chemical engineer has been based on the fundamental sciences of physics and chemistry, on mathematical and computer techniques, and on basic engineering principles. Such a broad background has made the chemical engineer extremely versatile and capable of working in a wide variety of industries: chemical, petroleum, aerospace, nuclear, materials, sanitation, food processing, and computer technology. The chemical industry alone provides an opportunity for the chemical engineer to participate in the research, development, design or operation of plants for the production of new synthetic fibers, plastics, chemical fertilizers, vitamins, antibiotics, rocket fuels, nuclear fuels, paper pulp, photographic products, paints, fuel cells, transistors, and the thousands of chemicals that are used as intermediates in the manufacture of the above products.

In practice, the activities of the chemical engineer are sufficiently diversified to attract a wide range of talents and abilities. The chemical engineers working in *process design* determine the sequence of steps to be followed in producing a useful product, calculate the sizes of the equipment required and the total cost, those working in *development research* do small scale studies on new processes or products; those working in *production* improve and coordinate the operation of plants and equipment. Others do *fundamental research* on the laws of science and their application. Many chemical engineers work in technical sales, cost estimation, patent law, and plant supervision. A chemical engineering background is often the best route to top-level management positions.

Degree Programs: The following degrees are offered by the Chemical Engineering Department: Bachelor of Science in Chemical Engineering, Bachelor of Science, Master of Engineering, Master of Science, Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

	Credits
Pre-Engineering Program	87
*EGN 1110 Engineering Graphics 1	(2)
ECH 3023 Introduction to Chemical Engineering	(5)
*Elective	(2)
Subtotal	9

*EGN 1111 may be taken to satisfy this requirement.

Engineering Science Courses

	Credits
EEL 3001 Introduction to Electrical Engineering	5
EGM 3511 Engineering Mechanics 1	4
EGM 3400 Engineering Mechanics 2	3
EGM 3520 Engineering Mechanics 3	3
ECH 3019 ChE Thermosynamics	2
EMA 3010 Materials	3
ECH 4504 Chemical Kinetics and Processing	3
ECH 4504L ChE Laboratory 7	2
ECH 4524 Reactor Dynamics and Design	3
ECH 4123 ChE Thermodynamics 2	5
ECH 4264 Elementary Transport Phenomena	3
ECH 4281 Multidirectional Transport Phenomena	2
Subtotal	38

Advanced Chemistry

CHM 3210, 3211 Organic Chemistry	7
CHM 3210L Organic Chemistry Lab	1
ECH 3804L	2
CHM 4410, 4411 Physical Chemistry	7
Subtotal	17

Engineering Analysis and Design

ECH 3303 Systems Analysis	2
ECH 3303L Chemical Engineering Lab 2	1
ECH 3203 Chemical Engineering Operations 1	3
ECH 3204 Chemical Engineering Operations 2	3
ECH 4323 Process Control Theory	3
ECH 4323L Chemical Engineering Laboratory 5	1
ECH 4224L Chem. Eng. Operations Laboratory 1	3
ECH 4403 Chemical Engineering Operations 3	3
ECH 4404L Chem. Eng. Operations Laboratory 2	3
ECH 4604 Cost Estimation of Process Designs	3
ECH 4644 Process Design	3
Subtotal	28

Other Required Courses

STA 3032 Engineering Statistics	3
ECH 4934 Seminar	1
Free Electives	9
Subtotal	13

Option Courses	Subtotal 21
Total Professional Programs	126
Total Pre-Engineering	87
Total BSChE Degree	213

DEPARTMENTAL PROGRAMS

These programs lead usually after 14 quarters to the degree of Bachelor of Science in Chemical Engineering. The option consists of 21 credits of which a student must have at least 12 credits in an area that constitutes a coherent thread of interest. A student elects an option area, then with his advisor selects the courses to form his option.

A *process engineering option* is a high quality fundamental program designed to educate an unusually versatile engineer who is capable of working in a large number of process industries and a wide range of jobs such as process

design, process research and development, and in the improvement of chemical and physical process and plant operations.

A *computer and information science option* (CIS) provides students a wide experience in the structure of computers, computer languages, and computer application in modern technology.

An *interdisciplinary option* permits the chemical engineering student with parallel interests In other fields to take approved course work in related engineering disciplines: Aerospace, Biomedical, Electrical, Environmental Materials, Mechanical, Nuclear, Food Science.

Biomedical and Environmental Options. Students having interests in the life sciences or the environmental problems of our society should consider these options. A biomedical option can satisfy the admission requirements for medical school and an environmental option is preparation for graduate work in Environmental Engineering.

A *practice option* is designed for students with strong chemical engineering backgrounds who also have interests in engineering plant operations and supervision, in business administration, in marketing, or technical sales and service. This program is designed for industrial employment or as a preparation for further work in Business Administration or Law. Admission to the graduate programs in engineering is also possible for those students who are qualified.

Among the programs offered, a *process engineering option* is recommended for most students because of the unusual versatility of employment opportunities that it provides in all areas. However, the other programs are available for students who desire greater flexibility in their academic program or who have more definite career objectives.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE & TO THE MASTERS DEGREE IN ENGINEERING

See University College portion for Pre-Engineering Curriculum.

The Department has also developed an alternative route for above-average students to attain high-level knowledge in applied science and chemical engineering fundamentals. This program consists of a bachelor's degree directly coupled to a Master of Engineering degree which can be completed within 5 years.

The bachelor's degree contains most of the same ChE courses as for the BSCHE degree and is awarded to students who have been admitted to the Graduate School. The ME degree involves the same spectrum of Chemical Engineering areas but with more sophisticated material than is contained in the BSCHE degree.

In the minimum of 234 quarter credits, the student will have earned a Master's degree and reached a significant level of professional education and will be capable of entering essentially all process industries in positions ranging from research to design, development, analysis, or operations.

The undergraduate program parallels the BSCHE program until the last three terms when the material in some courses and most electives are postponed to the graduate level where it is upgraded and supplemented. Details of the graduate program can be obtained from the Graduate Coordinator.

The curriculum consists of all courses required for the BSCHE degree except for ECH 4323, 4323L, 4524, 4264, 4281 (12 credits) and the option is replaced by 7 credits.

Total Credits Upper Division	90
Total Credits Lower Division	96
Total BS degree	186

CIVIL ENGINEERING

Civil Engineering is directly concerned with the activities of man and his environment. It is the oldest and most diverse branch of engineering and includes the design and construction of bridges, buildings, dams, waterways, coastal protection works, airports, pipe lines, missile launching facilities, blast shelters, railroads, highways, sanitary systems, ocean structures and facilities, foundations, harbors, water works, and many other systems and structures upon which modern civilization depends. In its broadest sense, the function of the civil engineer may therefore be defined as the adaptation of the physical features of the earth to the needs of man. Approximately one-fourth of all engineers are engaged in Civil Engineering.

The concentration of population into cities, the mass use of the automobile and the airplane, the increasing demands of industry for greater quantities of power and the public's demand for clean streams and beaches, for clean air, and the potential for man's expansion into space and the oceans present the civil engineer with many challenging problems.

To assist the young engineer to meet these challenges, the Civil Engineering Department offers a wide selection of courses in the fields of structural engineering, soil mechanics, foundations, hydraulics, coastal engineering, highways, and environmental engineering. Beyond the bachelor's degree, advanced degrees may be obtained in the several major areas of civil engineering such as transportation, hydraulics, structural, soil mechanics, foundations and construction.

While it is essential that the civil engineer understand the fundamentals of his chosen field, it is also necessary that he understand the role other branches of engineering play in the completed work. The Civil Engineering curriculum therefore includes courses from other engineering disciplines, and because of this broad program, it provides an excellent basic engineering education. Thus, the student who is not quite sure which field of engineering to choose is provided with the broadest of engineering backgrounds, a springboard, so to speak, to specialization.

Degree Programs. The Civil Engineering Department offers the following degrees: Bachelor of Science in Civil Engineering, Bachelor of Land Surveying, Master of Engineering, Master of Science, the Engineer Degree, and Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING

See University College portion for Pre-Engineering Curriculum.

	Credits
Pre-Engineering Program	86
EGN 1111 Engineering Graphics	3
EGN 1126 Design Processes in Engineering	2
EGM 3511 Engineering Mechanics-Statics	4
EMB 3400 Engineering Mechanics-Dynamics	3
EGM 3520 Mechanics of Materials	3
GLY 2026 Engineering Geology	4
EEL 3003 Elements of Electrical Engineering	5
EML 3100 Thermodynamics	5
STA 3032 Engineering Statistics	3
ECI 2122 Civil Engineering Concepts	2
ECI 3515 Engineering Measurements	2
ECI 3213 Hydraulics	4
ECI 3403 Civil Engineering Materials	4
ECI 3123 Mechanics of Engineering Structures	4
ECI 3103 Stress Analysis 1	4
ECI 4514 Surveying and Field Measurements	3
ECI 4145 Construction Methods and Management	4
ECI 4137 Civil Engineering Cost Analysis	3
TTE 4104 Highway Engineering	3
ECI 4214 Hydraulics and Water Resources Engineering	4

ECI 4404 Water Supply Engineering 4
ECI 4514 Sewerage and Waste Water Treatment 4
ECI 4314 Soil Mechanics 3
ECI 4305 Soil Mechanics and Foundations 4
ECI 4607 Introduction to Structural Design 4
ECI 4705 Stress Analysis 2 4
CES 4935 Senior Seminar 1
ECI 4041 Computer Methods in Civil Engineering 3
***Professional Electives 16
**Non-Technical Electives 4

Total Quarter Hours 202

**Elective choice from the social science and humanities areas is recommended.

***Professional Electives must be selected from the following list:

CES 4034 Structural Estimating (3)
ECI 4131 Construction Contracts and Specifications (3)
TTE 4007 Traffic and Transportation Engineering (4)
ENV 4621 Water Resources Engineering (3)
ECI 4324 Foundation Design (3)
CES 4704 Design in Reinforced Concrete (3)
ENV 4021 Water and Waste Water Treatment (4)
OCE 4016 Introduction to Coastal and Oceanographic Environment (4)

The student may also elect courses from the following list to satisfy the Professional Electives requirement. The student will be charged for these courses at the graduate course rate.

CES 5715 Prestressed Concrete (3)
CES 5325 Design of Highway Bridges (3)
CES 5801 Design in Steel and Timber (3)
ECI 5625 Geohydrology (3)
ECI 5235 Open-Channel Hydraulics (3)
GLY 5820 Groundwater Geology (4)
TTE 5105 Highway Design (3)
ECI 5317 Stress-Deformation Analysis of Soil Media (3)
ECI 5335 Soil Exploration for Engineering Design (3)
ECI 5125 Construction Equipment and Procedures (3)
ECI 5147 Construction Planning and Scheduling (3)
TTE 5006 Transportation Engineering (3)
TTE 5215 Traffic Engineering Characteristics (4)

NOTE: The above list may be amended without notice by the action of the faculty of the Department of Civil Engineering.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF LAND SURVEYING

A degree program in Land Surveying is offered through the Civil Engineering department. Present land values and high rates of land development require today's surveyor to perform professional services and make decisions that have far reaching effects. The land surveying degree program prepares the student for a lifetime of work in this challenging profession. The curriculum not only includes courses in surveying, but also provides a broad background in communications, basic science, mathematics, business principles, and computer utilization. A co-op program is required and is provided through the efforts of professional surveyor to insure that all surveying graduates serve a four-quarter training period before graduation.

Courses	Credits
Comprehensive English	9
American Institutions	9
Humanities	12
ENC 3343 Technical Writing	3
SPC 2300 Introduction to Oral Communications	5
ACC 2001 Elementary Accounting	5
EIN 4105 Specifications, Contracts, Ethics and Industrial Safety	3
MAC 1132 Algebra and Trigonometry	5
MAC 2223 Analytical Geometry and Calculus for Architecture	5
MAC 3224 Advanced Calculus for Architecture	4
STA 3032 Engineering Statistics	3
CHM 2040 General Chemistry	4
PHY 2004-2005 Applied Physics	10
EGN 1111-1123 Graphics	5
COP 3212-3111 Computer Programming	4
ETG 3530 Mechanical Testing Lab	1
ETC 3531 Physical Testing Lab	1
BCN 2400-3401 Construction Mechanics	10
EEL 3003 Elements of Electrical Engineering	5
REE 3042 Real Estate Analysis	5
REE 4434 Real Estate Law	4
REE 4704 Urban Land Use Analysis	4
ECI 4145 Construction Methods and Management	4
ECI 4137 Civil Engineering, Project Cost Analysis	3
BOT 3153 Local Flora	3
GLY 2026 Geology for Engineers	4
AST 1002-1022L Descriptive Astronomy	5
EVS 4215 Hydraulics and Hydrology	3
Specialty courses	32
Co-Op or Internship	4
Electives	78
Physical Education	2
Total Requirements	183

COMPUTER AND INFORMATION SCIENCES

During the last two decades electronic information processing machines with capability many orders of magnitude beyond their predecessors have come into being. Though still in their infancy they are already extending man's capability to solve problems in every field of human activity. Against this background, the organization of a curriculum dedicated to a broad sector of human endeavor was necessary. Toward this end the Intercollege Department of Computer and Information Sciences was created in 1971 offering degree programs in Arts and Sciences and Business Administration as well as Engineering.

Subject areas found within the CIS curricula are concerned with representations and transformations of information structures and with theoretical models for such representations and transformations. In addition the computer or information scientist is concerned with systems having the ability to transform information and the methodologies derived from broad areas of applications having common structures, processes and techniques.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER AND INFORMATION SCIENCES)

The curriculum in Computer and Information Sciences requires a minimum of 202 quarter credits as shown in the following list.

	Credits
Pre-Engineering Program	84
COC 3110, CDA 3101, COP 3530, 3550, and 3545	20
EGN 1110	2
*Engineering Core	9
CNM 3125, COP 4610, ESI 4523 and CDA 4040	15
CIS 4906 (2 hrs. lab, 2 hrs. project)	4
MAS 3114 and STA 4033	9
Technical Electives	22
**Restricted Technical Electives	20
Non-Technical Electives	10
Free Electives	7
Total Program	202

*Must choose at least three hours from each of three or four areas comprising ESM, EE, ME and MSE. Acceptable courses are EEL 3001, EML 3100 (or ECH 3101) and EMA 3010L (or EMA 3413). Other courses may be substituted by petition. Any

hours in excess of nine may be used as technical or free (not non-technical) electives.
**Must be chosen from approved lists copies of which may be obtained from the CIS departmental office in Weil 512.

ELECTRICAL ENGINEERING

Electrical Engineering is a science oriented branch of engineering primarily concerned with all phases and development of the transmission and utilization of power and intelligence. The study of electrical engineering is commonly divided into the academic areas of circuits, electronics, fields, electric energy engineering, communications, control, and computer engineering.

Because of the extremely rapid growth and changes relating to the application of electrical engineering principles, the curriculum is designed for concentration on a solid core of the basic foundation courses, rather than on a sampling of application courses which may soon become obsolete. Because of the strong core program, the electrical electives as listed are considered primarily as courses to be taken according to individual interest in order to permit a student to delve deeply into subject matter previously introduced. Other electives as indicated by the footnote may be selected from the approved lists of the Electrical Engineering Department.

The department's extensive laboratory facilities and varied research programs will assist in highlighting both the experimental and theoretical approaches to electrical engineering.

Beyond the baccalaureate degree the department offers graduate programs for students interested in advanced degrees. As more and more students are continuing to further their education in the graduate schools of the nation, it is advisable that those who may become qualified seek early counseling. Even as early as the seventh and eighth quarters, the course work in many cases may be directed toward future graduate work. Certainly, the choice of electives taken during the last few quarters of the undergraduate curriculum may relate to areas of interest to be pursued in the graduate program.

Degree Programs: The Electrical Engineering Department offers the following degrees: Bachelor of Science in Electrical Engineering, Master of Engineering, Master of Science, Engineer, and Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

The curriculum in electrical engineering requires completion of the following program in addition to the freshman-sophomore requirements outlined above.

Pre-Engineering Program 87

	Credits
*EGN 1110 Engineering Graphics	2
*EEL 3001 Introduction to Electrical Engineering	5
EEL 3303, 3304 Electronics 1 and 2	9
EEL 3111, 3112 Circuits 1, 2	6
EEL 3135 Signals and Systems	4
EEL 3472, 3473 Electromagnetic Fields and Applications 1 and 2	7
EEL 3751 Computational Techniques	4
EEL 3211, 3212 Elements of Electrical Energy Engineering 1 and 2	6
EEL 4514 Communication Systems and Components	4
EEL 4657 Linear Control Systems	4
EEL 3001L, 3303L, 4304L, 4201L, 4514L, 4905 Electrical Engineering Laboratories	6
Mathematics or Statistics Elective	3
EML 3100 Thermodynamics	5
EGM 3511, 3400 Engineering Mechanics	6
**EGM 3520 Strength of Materials	4
Technical Electives	28
Non-Technical Electives	9
*Electives	3
Total Credits Required	202

*These course requirements are often satisfied during the Freshman-Sophomore years.
**It is possible to substitute EMA 3010L for EGM 3520.

The technical electives are usually chosen with emphasis in one of the following areas:

1. Computer and Information Engineering
2. Communication Theory
3. Electronics
4. Electric Energy Engineering
5. Life Sciences
6. Circuits and Systems; and
7. Fields and Waves

ENGINEERING SCIENCES

The Department of Engineering Sciences offers bachelor's degree programs in Aerospace Engineering and in Engineering Science. At the graduate level it offers programs leading to master's degrees and the Engineer degree in aerospace engineering, in coastal and oceanographic engineering, in engineering mechanics, and in engineering science. The Doctor of Philosophy degree is offered in aerospace engineering and in engineering mechanics, with specialized tracks in the latter discipline in coastal and oceanographic engineering, in engineering analysis and applied mathematics and in theoretical and applied mechanics.

The department is committed to excellence in both teaching and research. Through active and diverse research programs, the professional competence of the faculty is maintained and both *undergraduate* and *graduate* students have opportunity to participate in exciting programs dealing with problems at the forefront of science, technology, and societal needs.

UNDERGRADUATE PROGRAM IN AEROSPACE ENGINEERING

This program is designed to prepare its graduates for careers in aeronautical engineering or in space-related engineering fields. It also prepares certain students for post-baccalaureate education in preparation for careers in advanced research.

On a strong base of physical and mathematical fundamentals, the program builds in the engineering principles essential to both atmospheric and extra-atmospheric flight. Aerodynamics, light-weight structures, flight propulsion and related subjects typical of aeronautical engineering are included. Also there are courses that introduce problems associated with space flight and its requirements. Integration of fundamentals and program principles into useful applications is made in design work at upper levels. Thus the curriculum provides the background for future technological growth while it also prepares the graduate for useful career work in the aerospace world.

The selection of an area of individual interest by the student enables his development of some concentration in that area through counseled choice of elective work. Examples of concentration areas are:

Aerodynamics
Design
Flight Propulsion
Flight Structures
Space Technology
Stability, Control and Guidance

Graduates of the Aerospace Engineering program are prepared for employment in aerospace industry in Florida and elsewhere. Their broad scope of fundamental preparation also suits them for specialized work in related industries and government laboratories.

UNDERGRADUATE PROGRAM IN ENGINEERING SCIENCE

The interdisciplinary nature of most of today's major engineering and social problems has led to a critical need for men and women thoroughly and broadly trained in engineering and the physical and social sciences. Based upon a broad foundation of science, engineering and the humanities, the Engineering Science Program is designed to educate engineers capable of becoming leaders in tomorrow's technological society.

One of the strongest features of the Engineering Science Program is the flexibility it offers the graduate to work in newly developing areas of engineering. Graduates of the program find many challenging career opportunities. Typical industrial opportunities include research, development, and manufacturing operations of computer, electronics, communications, chemical, aerospace, oceanographic petroleum, and consumer products corporations. There are also excellent opportunities in the many federal government services, and university-associated and privately operated research institutes and laboratories. In addition, many graduates of the program proceed immediately to graduate study in the various branches of engineering, mathematics, physics and life and social sciences. Also, an increasing number of students are finding the program to be excellent preparation for medical, dental, law, and business administration studies.

The curriculum leading to the degree of Bachelor of Science in Engineering Science consists of a core of courses providing a broad and basic background in mathematics, physics, chemistry, engineering science and design, humanities and social science. The remainder of the student's program consists of a large number of electives to be chosen by the student together with his individual faculty advisor to form a coherent group of courses directed toward a clearly defined objective. The exact content of this group of courses is determined by the student's career objectives. Guidelines for concentration in the following areas have been prepared and are available from Engineering Science Program counselors.

Applied Mathematics and Computer Science
Biomechanics
Biomedical Engineering (Pre-Medical)
Coastal and Oceanographic Engineering
Communications Sciences
Control of Dynamical Systems
Engineering Optics and Lasers
Environmental Engineering
Experimental Mechanics
Fluid Mechanics
Mechanics of Materials
Oceanographic Engineering
Pre-Dental
Pre-Law
Sociological Aspects of Engineering
Structural Mechanics
Technical Management (Business Administration)

These concentrations illustrate the extraordinary range of areas of specialization which may be followed within the framework of this program. The student may pursue one of these areas or build a coherent program toward some other objective with the aid of his adviser.

Students and prospective students of engineering science are encouraged to discuss their career objectives and academic plans with our counselors at all stages of their studies. More detailed program brochures and counseling appointments are readily available by writing or visiting the department offices.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING (AEROSPACE ENGINEERING)

Courses	Credits
Pre-Engineering Program	87
EAS 3001 Elem. of Aero. and Astronautics	3
EAS 4105 Applied Aerodynamics	4
EAS 4106 Low Speed Aerodynamics	5
EAS 4112 High Speed Aerodynamics	5
EAS 4122 Wing and Airfoil Theory	4
EAS 4200 Aerospace Structures 1	5
EAS 4210 Aerospace Structures 2	5
EAS 4220 Aerospace Structures 3	4
**EAS 4300 Aerospace Propulsion 1	5
EAS 4803 Instrumentation for Aerospace Engineers	3
EAS 4700 Aerospace Design 1	3
EAS 4710 Aerospace Design 2	3
EAS 4933 Senior Seminar	1
*EGN 1111 Engineering Graphics	3
EEL 3001 Introduction to Electrical Engineering	5
EGM 3511 Engineering Mechanics-Statics	4
EGM 3400 Engineering Mechanics-Dynamics	4
EGM 3520 Mechanics of Materials	4
EGM 3803 Fluid Mechanics	4
EGM 4312 Engineering Analysis 1	4
EGM 4313 Engineering Analysis 2	4
**ESI 3502 Numerical Techniques	2
EML 3100 Thermodynamics 1	5
EMA 3010 Materials 1	4
EAS Electives	8
Technical Electives	8
Non-Technical Electives	6
Upper Division Total	106
Total Credits	202

*EMC 4419 and EML 4411 (6 Credits) may be substituted for EAS 4300.

**EEL 3751 may be substituted for ESI 3502.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING (ENGINEERING SCIENCE)

Course	Credits
Pre-Engineering Program	87
EAS 4933 Senior Seminar	1
EEL 3001 Introduction to Electrical Engineering	5
EEL 3001L Electrical Engineering Laboratory 1	1
EEL 3303 Electronics 1	4
EEL 3111 Circuits 1	3
EEL 3472 Electromagnetic Fields 1	4
EEL 3751 Computational Techniques	4
EGN 1110 Engineering Graphics	2
EGM 3511 Engineering Mechanics-Statics	4
EGM 3400 Engineering Mechanics-Dynamics	4
EGM 3520 Mechanics of Materials	4
EGM 3803 Fluid Mechanics	4
EGM 4000 Engineering Design 1	4
EGM 4001 Engineering Design 2	4
EGM 4312 Engineering Analysis 1	4
EMG 4313 Engineering Analysis 2	4
EGM 4314 Engineering Analysis 3	4
EGM 4008 Introduction to Engineering Optics	4
EMA 3010 Materials 1 and EMA 3012L EMA 3413 Electrical Properties of Materials	4
+PHY 3123 Modern Physics 1	3
Thermodynamics Electives	5

+Students enrolled in the environmental engineering concentration may substitute CHM 3120 or ZOO 2010 for PHY 3123 with approval of adviser.

**General Electives	36
Departmental Electives	3
Total Requirement	202

**The 36 hours of general electives shall include a minimum of 10 hours of humanities and/or Social Science and a minimum of 10 hours of technical courses. General and departmental electives shall include at least three hours of laboratory courses. Subject to this restriction, the student may choose his electives from courses offered throughout the university, provided they form a coherent group of courses directed toward a clearly defined objective and are approved by the student's departmental counselor.

ENGINEERING TECHNOLOGY

Engineering Technology offers a coherent four-year program of study leading to the Bachelor of Engineer Technology degree. This 183 quarter hour program can be easily completed in four years by the average student. It is possible for a student to transfer into this program from a Community or Junior College with an AA or AS degree. It is preferred that these students take a pre-technology program leading to an AA degree.

Engineering Technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the craftsman and the engineer at the end closest to the engineer.

The internship program involves several possibilities, one being the student spending the afternoons of 20 or more weeks during the Senior year in an engineering shop or laboratory working with the people involved in various projects in order to become skilled in a specialized technique. Another possibility is a closely supervised co-op program in industry.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF ENGINEERING TECHNOLOGY

Core Courses	Credits
Comprehensive English	9
American Institutions	9
Humanities	12
ENC 3343 Technical Writing	3
SPC 2300 Introduction to Oral communications	5
Physical Education	2
AAC 2001 Elementary Accounting	5
EIN 4105 Specifications, Contracts, Ethics and Industrial Safety	3
MAC 1132 Algebra and Trigonometry	5
MAC 2223 Analytical Geometry and Calculus for Architecture	5
MAC 3224 Advanced Calculus for Architecture	4
STA 3032 Engineering Statistics	3
CHM 2040 General Chemistry	4
PHY 2004, 2005 Applied Physics	10
EGN 1111, 1123 Graphics	5
COP 3212, 3111 Computer Programming	4
ETG 3530 Mechanical Testing Lab	1
ETG 3531 Physical Testing Lab	1
BCN 2400, 3401 Construction Mechanics	10
EEL 3003 Elements of Electrical Engineering	5
Total Credits	105

COURSES SPECIAL TO MATERIALS TECHNOLOGY MAJORS

Courses	Credits
CHM 2041 General Chemistry	4
MAN 3010 Principles of Management	4
EIN 4354 Engineering Economy	3
EML 3100 Thermodynamics	5
ETI 3411, 3412 Machine Shop	2
EMA 3010L Materials 1	3
EMA 3012L Materials 1 Lab	1
EMA 3622L Materials Processing Lab	1
EMA 4522L Metallography Lab	1
EMA 4632L Metals Joining Lab	1
EMA 3080 Phase Diagrams	3
Specialty Courses	32
Technical Electives	8
Co-op or Internship	10
Total Credits	183

ENVIRONMENTAL ENGINEERING SCIENCES

Environmental Engineering Sciences is a rapidly developing field in which the application of engineering and scientific principles is used to protect and preserve man's health and well-being through the control of his environment. Initially concerned only with water resources and the treatment or protection of drinking water supplies, the field first became known as Sanitary Engineering. Now, since it embraces the broad field of the general environment, including air, food, shelter, radiological health, transportation and accident prevention as well as water, the term Environmental Engineering Sciences is preferred.

During recent years, there has been such an unprecedented demand for environmentalists that there are many more positions open than there are properly qualified graduates to fill them. It has been estimated that the number of engineers and scientists employed in health departments alone will have to be more than doubled to supply the present need. Increasing activities in many applications of nuclear energy are likewise demanding individuals with special training in environmental control. Hazards and wastes from research, reactor operation, radiological procedures and tracer techniques are problems which are properly the concern of these specialists and require more qualified persons than are presently available.

More and more industries are now using the varied services of environmental engineers and scientists to good advantage. The growing importance of atmospheric pollution problems has led many industries to give increased attention to this phase of waste disposal. Graduates from Environmental Engineering Sciences programs are being called upon by industry to apply their special knowledge in conducting surveys and formulating abatement programs which will not merely transfer the pollution from the air to other areas of the environment.

The reasons for this expanding field of opportunity are due largely to the impact of advancing technology on modern community living. With each new development there has been a period of transition during which the pollution control specialist has been called upon to broaden his activities to keep pace with progress and new developments in environmental protection and public health.

This process of evolution has manifested itself in so many different aspects of environmental concern that environmental engineering sciences has become one of the broadest and most challenging of all careers. Advances in technology create more demands for environmental engineers and scientists. Every new manufacturing plant, every new chemical industry, new improvements in nuclear science and in transportation — all increase the number and magnitude of problems for these specialists to solve.

It is becoming increasingly apparent that the environment cannot be sectionalized, but rather, it must be viewed as one continuous entity consisting of air, water, land, and people. This ecological concept has given rise to a new approach to environmental problems known as environmental systems management or systems ecology. To function in this area, an individual needs a broad background, not only in the basic sciences and engineering but also in medical sciences, law,

economics, and political science. Students in other fields are encouraged to join with the engineers and scientists in this program by selecting environmental engineering sciences courses and, when suitable, to undertake master's and doctoral research at the interface between environmental engineering sciences and their major field.

Historically, degree programs in Environmental Engineering Sciences have been at the graduate level. However, responding to the tremendous demand for people trained in this field, the Department of Environmental Engineering Sciences initiated an undergraduate degree in 1972. The requirements for this degree, Bachelor of Science (in Environmental Engineering Sciences), are given below. In addition, the Department of Chemical Engineering, the Department of Civil Engineering and the Department of Engineering Sciences permit their students to pursue technical concentration in Environmental Engineering Sciences. This is accomplished through the selection of appropriate technical elective courses taught by the Department of Environmental Engineering Sciences. Persons with pre-medical interests can satisfy admission requirements for medical school with this program and judicious selection of electives. Students from other departments are also welcome to take courses in Environmental Engineering Sciences to the extent allowed by their backgrounds.

Degree Programs: The Department of Environmental Engineering Sciences offers the following degrees: Bachelor of Science, Master of Engineering, Master of Science, the Engineer Degree and Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE (ENVIRONMENTAL ENGINEERING SCIENCES) OR (ENVIRONMENTAL ENGINEERING)

The Department of Environmental Engineering Sciences offers the Bachelor of Science degree with a specialty in either Environmental Engineering Sciences or Environmental Engineering. The curriculum for the Bachelor of Science (Environmental Engineering Sciences) is as follows:

Courses	*Credits*
Pre-Engineering Program	87
BSC 2010C Molecules and Cells	4
BSC 2011C Organisms	4
BSC 2012C Populations and Communities	4
CHM 3200 Organic Chemistry	4
ECI 4137 Civil Engineering Project Cost Analysis	3
ENV 4404 Water Supply and Wastewater Removal	4
ENV 4514 Treatment of Water and Wastewater	4
OCE 4016 Intro. to Coastal and Oceanographic Environment	4
EEL 3003 Elements of Electrical Engineering	5
EGM 3803 Fluid Mechanics	4
EES 2001 Concepts of Environmental Engineering Sciences	2
EES 4004 Environmental Engineering Sciences	4
EGM 3511 Engineering Mechanics — Statics	4
ESI 3123 Analog Computer Principles	2
*EML 3100 Thermodynamics 1	5
STA 3032 Engineering Statistics	3
	147

*CHM 4411 and CHM 4412 Physical Chemistry (7 credits) may be substituted for EML 3100.

Restricted Science and Engineering Electives (4 out of 7 courses)

	Credits
PCB 3033C Introduction to Ecology	5
EES 4241 Water and Wastewater Analysis	4
GLY 2026 Engineering Geology	4
STA 4603 Survey of Operations Research	4
MCB 3013 Basic Biology of Microorganisms	3
and MCB 3013L Lab for MCB 3013	2
PHY 3123 Modern Physics 1	3
ECH 4012 Elements of Chemical Engineering	3
	14-18

Restricted Professional Electives (3 out of 5 courses)

EES 3008 Energy and Environment	4
EES 4401 Public Health Engineering	4
ENV 4201 Introduction to Radiological Health	4
ENV 4104 Introduction to Air Pollution	4
ENV 4351 Introduction to Solid Wastes	3
	11-12
**Technical Electives	15-20
***General Electives	10
Total Quarter Hours	202

**The sum of the Restricted Science and Engineering Electives, the Restricted Professional Electives, and the Technical Electives must amount to at least 45 credits.

***At least 4 credits of the General Electives must be in a socio-humanistic area.

The curriculum for the Bachelor of Science (Environmental Engineering) degree is the same as for the Environmental Engineering Sciences specialty except that at least 12 of the Technical Elective credits must be selected from the list of approved engineering design courses given below. The Bachelor of Science (Environmental Engineering) program has been accredited by the Engineers' Council for Professional Development.

Courses	*Credits*
ECI 4214 Hydraulics and Water Resources Engineering	4
ENV 4621 Water Resources Engineering	3
EOC 5860 Harbor Engineering	4
EOC 5001 Ocean Engineering	4
ENV 4021 Basic Concepts of Water and Wastewater Treatment	4
ENV 6516 Advanced Waste Treatment Operations	4
ENV 6437 Advanced Environmental Engineering Design 1	5
ENV 6438 Advanced Environmental Engineering Design 2	5
ENV 6115 Air Pollution Control Measures	4

INDUSTRIAL AND SYSTEMS ENGINEERING

The rapid growth and complexity of industry in the United States and the Southeast in particular have created unusual opportunity for Industrial Engineers and Systems Engineers. The advent of automation and the emphasis on increased productivity coupled with higher levels of systems sophistication are providing impetus to the demand for the engineering graduate with a broad interdisciplinary background.

The curriculum in industrial engineering prepares the student for industrial practice in such areas as product design, process design, plant operation, production control, quality control, facilities planning, work system analysis and evaluation, and economic analysis of operational systems.

The department offers an undergraduate program in systems engineering which emphasizes the integration of knowledge and technology from the engineering, biological, and physical sciences to carry out the processes of description, analysis, synthesis, and optimization in both the industrial and non-industrial setting. The Systems Engineer learns to define problems from a broad perspective in which the contributions of individual components to a total mission is clearly seen.

Both the Industrial Engineer and the Systems Engineer are concerned with the use of engineering principles in the solution of problems encountered in environments and situations where a quantitative basis for decision making is desirable. Such decision making requires the application of the tools of economics, operations research, statistics, mathematics, and engineering analysis, with dependence on the computer.

Depending upon his interest, the student may pursue a major program in industrial engineering or in systems engineering. These major programs offer the required flexibility to meet the diversified demands of all industry and graduate schools. The industrial engineering program prepares the student for professional engineering practice while the systems program further prepares the engineer to carry out analysis and design of large scale operations requiring diversified inputs. Both programs will allow the interested students to prepare for graduate study.

Degree Programs: The Industrial and Systems Engineering Department offers the following degrees: Bachelor of Science in Industrial Engineering, Bachelor of Science in Engineering (Systems Engineering), Master of Engineering, Master of Science, the Engineer Degree, and Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

Upon satisfactory completion of the pre-engineering program, the following courses constitute the requirements for the degree of Bachelor of Science in Industrial Engineering.

Engineering College Core Program (34 credits minimum)

Courses	Credits
EGM 3511, 3400 Engineering Mechanics 1 and 2	10
EEL 3001 Introduction to Electrical Engineering	5
EML 3100 or Thermodynamics	5
or	
ECH 3101 Chemical Engineering Thermodynamics 1	3
or	
Fluid Mechanics	5
EMA 3010L Materials 1	4
or	
ECH 3824 Materials of Engineering	3
ESI 3502 Numerical Techniques	2
ESI 3123 Analog Computer Principles	2
ESI 4523 Industrial Systems Simulation	3
An elective course restricted to one of the five areas above to to total a minimum of 34 credits (including EIN 3114)	(maximum) 4

Industrial Engineering Core Program

Courses	Credits
Pre-engineering Program (Net from Lower Div.)	87
ACC 2001 Elementary Financial Accounting	5
EGN 1111 Engineering Graphics	3
ECO 2023 Basic Economics	5
STA 4321, 4322 Mathematical Statistics 1, 2	8
EML 3321 Manufacturing Processes	4
EIN 3304 Industrial and Service Processes	3
ESI 3305 Introduction to Industrial and Systems Engineering	3
EIN 3314L Work Design	3
ESI 4567 Matrix Methods in Systems Engineering	3
ESI 4568 Transform Methods in Systems Engineering	3
EIN 4344 Inventory Systems	3
EIN 4354 Engineering Economy	3
EIN 4333 Production and Inventory Control Systems	3
EIN 4365 Facilities Planning	3
EIN 4335 Production Systems Analysis and Design	3
EIN 4243 Human Engineering	3
ESI 4221 Industrial Quality Control	3
ESI 4312, 4313 Operations Research	6
EIN 4937 Seminar	1
Technical Electives	11
Non-technical Electives	9
Total Quarter Hours	203

Prospective junior college transfers should take the equivalent of 6 quarter credits in basic economics and/or 5 quarter credits of elementary financial and cost accounting if other designated courses are not available.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING (SYSTEMS ENGINEERING)

The following courses are required for the degree of Bachelor of Science in Systems Engineering as part of the pre-engineering program.

Courses	Credits
EGN 1111 Engineering Graphics	3
ESI 3305 Introduction to Industrial and Systems Engineering	3
ESI 3502 Numerical Techniques	2
ESI 4567 Matrix Methods in Systems Engineering	3
Total Hours	10

Upon satisfactory completion of the pre-engineering program the following courses listed alphabetically constitute the requirements for the degree of Bachelor of Science in Systems Engineering.

Courses	Credits
EMA 3010L Materials 1	4
EEL 3001 Introduction to Electrical Engineering	5
EEL 4657 Linear Control Systems	4
EGM 3511 Engineering Mechanics 1	4
ESI 3123 Analog Computer Principles	2
ESI 4568 Transform Methods in Systems Engineering	3
EIN 4344 Inventory Systems	3
EIN 4354 Engineering Economy	3
EIN 4355 Economic Decision Models	3
EIN 4243 Human Engineering	3
ESI 4221 Industrial Quality Control	3
ESI 4523 Industrial Systems Simulation	3
ESI 4312, 4313 Operations Research 1 and 2	6
ESI 4545 Stochastic Systems	3
ESI 4554 Systems Design	3
EIN 4937 Industrial and Systems Engineering Seminar	1
ESI 4560 Numerical Techniques in Systems Engineering	3
ESI 4235 Methods of Reliability Engineering	3
EML 3100 Thermodynamics 1	5
STA 4321, 4322 Mathematical Statistics 1, 2	8
Restricted Technical Electives	6
Technical Electives	13
Non-Technical Electives	10
Plus one of the following:	
EEL 3303 Fundamental Electron Devices	3
EEL 3111 Circuits 1	3
EEL 3472 Electromagnetic Fields 1	3
EEL 4516 Noise in Devices and Communications Systems	5
EEL 3211 Elements of Electrical Energy	3
EEL 5182 Control System Theory & Practice	4
Total Hours	203

RESTRICTED TECHNICAL ELECTIVES FOR SYSTEMS ENGINEERING

Environmental Engineering
- ENV 4404 Water Supply Engineering
- ENV 4514 Sewerage and Wastewater Treatment

Chemical Engineering
- ECH 3023 Introduction to Chemical Engineering
- ECH 3023L Chemical Engineering Lab 1

Coastal Engineering
- OCE 4016 Introduction to Coastal and Oceanographic Engineering
- OCP 4290 Coastal Hydraulics

Computer Science
- COP 3202 Problem Oriented Languages
- COP 3530 Data Structures

Economics
- ECO 3251 National Income Determination and Policy
- ECO 3100 Prices and Markets
  - or
- ECO 6426 Econometric Methods 1
- ECO 6427 Econometric Methods 2

Electrical Engineering
EEL 3303 Fundamental Electron Devices
EEL 3111 Circuits 1
or
EEL 5182 Control Systems Theory and Practice
EEL 5134 Synthesis of Linear Control

Industrial and Systems Engineering
ESI 5571 Digital Computer Techniques 2
ESI 5135 Hybrid Computer Techniques

Mathematics
MAA 4226 Introduction to Modern Analysis I
MAA 4227 Introduction to Modern Analysis II

Mechanical Engineering
EML 4419 Aircraft Propulsion
EML 4411 Mechanical Propulsion Systems 2

Nuclear Engineering
ENU 4103 Introduction to Nuclear Engineering 1
ENU 4104 Introduction to Nuclear Engineering 2

Statistics
STA 6206 Design and Analysis of Experiments 1
STA 6207 Design and Analysis of Experiments 2
or
STA 6326 Introduction to Theoretical Statistics 1
STA 6327 Introduction to Theoretical Statistics 2

Traffic Engineering
TTE 5215 Traffic Engineering Characteristics
TTE 6256 Traffic Engineering Operations and Analysis

INTERDISCIPLINARY ENGINEERING STUDIES

Students with at least a 2.5 grade-point average are eligible to participate in a special program which allows the student to develop a plan of study to meet his or her educational objectives. The program must satisfy the minimum engineering science course requirements and be approved by a committee consisting of three members of the engineering faculty and by the Associate Dean of the College. Completion of the program leads to a B.S. degree. Further information is available in the Office of the Associate Dean.

MATERIALS SCIENCE AND ENGINEERING

Engineering in all of its branches requires the effective use of materials. The curricula in Materials Science Engineering offer preparation in the solving of problems in the development, manufacture, and utilization of metallic and of certain non-metallic materials. Competence arises from a firm understanding of the fundamentals of chemistry, mechanics, solid state physics, and structure of materials. Thus, the Materials Engineer occupies a unique position between the science and the practice of engineering, which is advantageous in the wide variety of avenues of professional development open to him. Since progress with new engineering concepts is often dependent upon success in advancing the capabilities of materials, he is in constant demand in many segments of industry engaged in production, application, and research on materials and in private engineering practice. The Bachelor's Degree program provides a general materials science core together with specializations in metallurgy, ceramics and polymers. For the student whose primary interest lies in research, a graduate program leading to the degrees of Master of Science in Engineering and Doctor of Philosophy is provided. The entire offering of courses at both the undergraduate and graduate levels is designed also to furnish electives for engineers in other specialties, who desire a more extensive understanding of materials than is given by the required courses.

Degree Programs: The Materials Science and Engineering Department offers the following degrees: Bachelor of Science in Engineering (Metallurgical Engineering), Bachelor of Science in Engineering (Ceramic Engineering), Bachelor of Science in Engineering (Polymers Engineering), Master of Engineering, Master of Science, the Engineer Degree, and Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING (METALLURGICAL ENGINEERING), (CERAMIC ENGINEERING) OR (POLYMERS ENGINEERING)

In addition to the 87 credits listed as Freshman and Sophomore requirements in the College of Engineering, the following courses are required for the various Bachelor of Science in Engineering degrees offered by the Department of Materials Science and Engineering.

Engineering College Core Courses

	Credits
EGN 1110 Elementary Engineering Graphics	2
EEL 3003 Elements of Electrical Engineering	5
EGM 3511 Statics	4
EGM 3400 Dynamics	3
EGM 3520 Mechanics of Materials	3
ESI 3502 Numerical Techniques	2
EIN 4354 Engineering Economy	3
EMA 3010 Materials 1	4
STA 3032 Statistics	3
CHM 4411 Physical Chemistry 2	4

Materials Science Core Courses

	Credits
EMA 3123 Metallurgical Engineering	3
EMA 3050 Ceramics Engineering	3
EMA 3066 Polymers Engineering	3
EMA 3413 Electronic Materials	3
EMA 3080 Phase Diagrams	3
EMA 3513 Analysis of Structure of Materials	3
EMA 3622L Materials Processing Lab	1
ETG 3530L Mechanical Testing Lab	1
ETG 3531 Physical Testing Lab	1

Advanced Courses in Materials Science

	Credits
EMA 4125 Microstructural Transformations in Materials	3
EMA 4714 Materials Selection and Failure Analysis	4
EMA 4223 Mechanical Behavior of Materials	4
EMA 4314 Energetics and Kinetics in Materials Science	4
EMA 4324 Stability of Materials	4
EMA 4524L X-ray and Electron Metallography	4
EMA 4940 Field Trips	1
EMA 4913 Research in MSE 1	3
EMA 4914 Research in MSE 2	3

To complete the requirements for the degree, each student must select one of the following 32 credit specializations.

Ceramic Specialty

	Credits
EMA 4643 Ceramic Glazes	4
EMA 4144 Physical Characteristics of Ceramics	3
EMA 4145 Ceramic Microstructures	3
EMA 4444 Electronic Ceramics	3
*Electives	19

Metallurgical Specialty

	Credits
EMA 4121 Materials 2	3
EMA 4122 Materials 3	3
EMA 4124 Structure and Properties of Alloys	3
EMA 4224 Mechanical Metallurgy 2	3
EMA 4634L Metal Forming	4
EMA 4623 Process Metallurgy 1	3
EMA 4624 Process Metallurgy 2	3

EMA 4522L Metallurgy Lab 2 1
EMA 4632L Metallurgy Lab 3 1
•Electives 8

Polymers Specialty

	Credits
CHM 5511 Polymer Physics	3
CHM 5272 Polymer Chemistry	3
Specific Electives	16
•Electives	10

•At least 8 credits of electives must be non-technical.

Summary of Degree Requirements	Credits
Freshman and Sophomore Requirements	87
Engineering College Core Courses	33
Materials Science Core Courses	21
Advanced Courses in Materials Science	30
Specialty Courses	32
Total Requirements	203

MECHANICAL ENGINEERING

The broad scope of Mechanical Engineering makes it possible for a student pursuing a degree in this field to prepare himself for a wide variety of engineering careers. The core of the curriculum in Mechanical Engineering is centered upon the fundamentals of scientific and mathematical logic. Individual programs are available wherein a student may develop specialized interests in the engineering aspects of heat, work, motion and energy conversion.

Degree Programs: The Mechanical Engineering Department offers the following degrees: Bachelor of Science in Mechanical Engineering, Master of Engineering, Master of Science, Engineer Degree, and Doctor of Philosophy.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

The following list of courses are those that must be completed by upper division students to become eligible for the Bachelor's degree in Mechanical Engineering:

Freshman-Sophomore Requirements 87
EGN 1111 Engineering Graphics 3
EGN 1126 Design Processes in Engineering 2
EGM 3511 Engineering Mechanics-Statics 4
EEL 3001 Introduction to Electrical Engineering 5
EEL 3218 Electric Energy Engineering 3
EEL 3368 Electronics Systems and Instrumentation 4
EEL 3001L Electrical Engineering Laboratory 1 1
EGM 3400 Engineering Mechanics-Dynamics 3
EGM 3520 Mechanics of Materials 3
STA 3032 Engineering Statistics 3
EMA 3010L Materials 3
EMA 3012L Materials 1 Lab 1
EML 3301 Instruments and Measurements Laboratory 2
EML 3202 Mechanisms and Kinematics 4
EML 3100 Thermodynamics 1 5
EML 3102L Thermodynamics 2 4
EML 3101L Thermodynamics Laboratory 1
EML 3260 Machine Dynamics 4
EML 3321 Manufacturing Processes 3
EML 4920 Professional Orientation 1
EML 4936 Seminar 1
EML 4140 Heat Transfer 1 3
EML 4141 Heat Transfer 2 3
EML 4522 Mechanical Engineering Analysis 3
EGM 3803 Fluid Mechanics 4
EML 4709 Fluid Dynamics 3
EML 4220 Mechanical Vibrations 4
EML 4500 Machine Analysis and Design 1 3
EML 4501 Machine Analysis and Design 2 3
General Electives 8
Technical Electives 23
Total hours required 204

TYPICAL TECHNICAL ELECTIVES

Students enrolled in Mechanical Engineering are required to take 23 quarter hours of technical electives. The following is a partial listing that represents a cross-section of acceptable technical electives. A department counselor is available to assist in the planning of a logical and interesting elective program.

EML 3005 Intro. Mechanical Engineering Design 3
EML 4263 Dynamics of Rotating Machinery 3
EML 4263 Dynamics of Rotating Machinery 3
EML 4411 Mechanical Propulsion Systems 3
EML 4601 Refrigeration and Air Conditioning 3
EML 4450 Energy Conversion 3
EML 4926 Mechanical Consulting Practice 3
EML 4416 Solar Energy 3
EML 4502 Machine Analysis and Design 3 3
EML 5311 Control System Theory 3
EML 5526 Biomechanics of Surgical Implants 3
EML 5524 Engineering Acoustics and Noise Control 3
EML 5714 Gas Dynamics of Internal Flow Systems 3
EML 5105 Classical Thermodynamics 3
EML 5273 Advanced Dynamics of Machinery 3
EML 5223 Design Synthesis in Vibrations 3
EML 5515 Gas Turbines and Jet Engines 3
EML 5504 Mechanical Design 1 3
EGN 4114 Engineering Graphical Analysis 3
EMA 4714 Materials Selection and Failure Analysis 3
EMA 4324 Stability of Materials 3
EIN 4354 Engineering 3

Certain courses in other engineering disciplines, and advanced physics and mathematics are also acceptable.

NUCLEAR ENGINEERING SCIENCES

Nuclear Engineering Sciences comprises those fields of engineering and science directly concerned with the release, control and safe utilization of nuclear energy. Applications range over such broad topics as the design, development and operation of nuclear reactor power systems to the applications of radiation in medicine, environmental sciences and other related disciplines. The nuclear engineer, by virtue of his engineering and science-based training, is in a unique position to contribute to the many diverse aspects of this major component of the energy field.

The nuclear engineering program has sufficient flexibility so that the proper choice of electives will allow emphasis in nuclear power technology, radiation safety, nuclear instrumentation, power management, radioisotope applications, and other specialized areas. A full complement of experimental facilities are available; these include: a 100 KW training reactor, a 4 MeV Van de Graaff accelerator, an IBM-1800 digital computer for on-line data acquisition and analysis, two analog computers, a hybrid computer facility, two subcritical assemblies, two neutron generators, plasma and MHD research facilities as well as a large amount of specialized nuclear instrumentation.

Degree Programs: The Department of Nuclear Engineering Sciences offers the following degrees: Bachelor of Science in Engineering (Nuclear Engineering), Bachelor of Science (Nuclear Engineering Sciences), Master of Engineering, Master of Science, Engineer, and Doctor of Philosophy. Also, students with special requirements may establish an interdisciplinary engineering program leading to the Bachelor of Science degree (see general College of Engineering regulations).

For further information and for assistance in curriculum planning students interested in nuclear engineering should contact the Nuclear Engineering Sciences undergraduate counselor.

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING (NUCLEAR ENGINEERING)

The following courses must be completed by upper division students to be eligible for the BSE(NE) degree. For the lower division requirements refer to the Pre-Engineering Curriculum.

Courses	Credits
Pre-Engineering Program	87
EGN 1111 Engineering Graphics 1	3
EMA 3010L Materials	4
PHY 3123 Modern Physics 1	3
EEL 3001 Introduction to Electrical Engineering	5
EEL 3001 Electrical Engineering Laboratory	11
EEL 3303 Fundamentals of Electron Devices	4
EGM 3511 Engineering Mechanics-Statics	4
EGM 3520 Strength of Materials	4
MAP 4305 Introduction to Differential Equations for Engineers and Physical Scientists	3
MAS 4156 Introduction to Vector Analysis	3
ENV 4241 Fundamentals of Radiation Protection	4
ESI 3502 Numerical Techniques	2
EML 3100 Thermodynamics	5
ENU 4103 Nuclear Engineering 1	4
ENU 4104 Nuclear Engineering 2	4
ENU 4144 Nuclear Power Reactor Systems	4
ENU 4505 Nuclear Engineering Laboratory 1	4
ENU 4134 Thermodynamics, Heat & Mass Transfer in Nuclear Systems	4
ENU 4304 Applications of Nuclear Radiation & Energy 1	4
ENU 4605 Interaction of Radiation with Matter	4
ENU 4612 Nuclear Instrumentation Systems	4
ENU 4912 Nuclear Power Reactor Design	4
ENU 4704 Advanced Concepts for Nuclear Energy	4
Nontechnical Electives	8
Engineering Science Electives	11
Design, or Technical Electives	11
Total	202

RECOMMENDED ENGINEERING SCIENCE ELECTIVES

Courses
ENU 3002 Survey of Nuclear Technology in Modern Life
ECI 3213 Hydraulics 1
ECH 4264 Transport Phenomena
ECH 3101 Chemical Engineering Thermodynamics 1
EGM 5816 Tensor Fields and Fluid Dynamics
EEL 3472 Electromagnetic Fields 1
EEL 3473 Electromagnetic Fields 2
EGM 4314 Engineering Analysis 3
EGM 4200 Fundamental Vibration Analysis
EGM 3803 Fluid Mechanics
EGM 3400 Engineering Mechanics — Dynamics
EES 5105 Environmental Biology
EML 3102 Thermodynamics 2
EML 4140 Heat Transfer 1
EML 4141 Heat Transfer 2
EML 4709 Fluid Dynamics
EML 4450 Energy Conversion
EMA 3413 Electrical Properties of Materials
EMA 4121 Materials 2
EMA 4122 Materials 3
EMA 4144 Processes and Properties of Ceramic Materials

It should be noted that the above is not a complete list of acceptable engineering science electives but represents those commonly recommended.

DESIGN OR TECHNICAL ELECTIVES

Students are encouraged to concentrate several technical elective courses in one discipline of their choice in order to achieve solid familiarity with this "minor" field of study. The design or technical electives together with the engineering science electives, chosen in consultation with the departmental counselor, allow specialization in such areas as Reactor Engineering, Reactor Operations and Management, Radioisotopes and Nuclear Radiation Technology, Radiation and Living Systems, Associated Systems (e.g. Plasma Engineering, Special Nuclear Devices, Computer Systems).

The following technical elective courses are available through the department:

ENU 3012 History of Nuclear Energy
ENU 5005 Principles of Nuclear Reactors
ENU 4601 Applications of Nuclear Radiation and Energy 2
ENU 4405 Nuclear Processing and Separations
ENU 5414 Isotope Separation
ENU 5186 Reactor Fuel Cycles
ENU 5176L Principles of Nuclear Reactor Operations
ENV 4241 Fundamentals of Radiation Protection

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE (NUCLEAR ENGINEERING SCIENCES)

The following courses must be completed by upper division students to be eligible for the BS(NES) degree. For the lower division requirements refer to the Pre-Engineering Curriculum. This degree is designed for those students interested in pursuing a nuclear science oriented program and expecting to continue their studies at the graduate level — typical emphasis areas are nuclear radiation protection, nuclear interactions and nuclear plasmas and fusion.

Courses	Credits
Pre-Engineering Program	87
ESI 3502 Numerical Techniques	2
EMA 3010L Materials 1	4
EGM 4312 Engineering Analysis 1	4
EGM 4313 Engineering Analysis 2	4
EGM 4314 Engineering Analysis 3	4
EEL 3003 Elements of Electrical Engineering	5
PHY 3123 Modern Physics 1	3
EML 3100 Thermodynamics	5
ENU 4101 Principles of Nuclear Reactors	4
ENU 4605 Interaction of Radiation with Matter	4
ENU 4905 Special Problems in NES	12
Option Electives	20
Other Electives	44
Total	202

TYPICAL OPTIONS

A. Nuclear Radiation Protection	Credits
ENU 4103 Introduction to Nuclear Engineering 1	4
ENU 4104 Introduction to Nuclear Engineering 2	4
ENU 4144 Nuclear Power Reactor Systems	4
ENU 4505L Nuclear Engineering Laboratory 1	4
ENU 4304 Applications of Nuclear Radiation and Energy 1	4
ENU 5176L Principles of Nuclear Reactor Operations	3
ENU 5625 Bionucleonics	3
ENU 5626 Radiation Biology	4
ENV 4241 Fundamentals of Radiation Protection	4
ENU 5306 Radioisotope Theory and Techniques	5
APB 3223 Basic Anatomy and Physiology	3 to 5

B. Nuclear Interactions	
ENU 4103 Introduction to Nuclear Engineering 1	4
ENU 4104 Introduction to Nuclear Engineering 2	4
ENU 4144 Nuclear Power Reactor Systems	4
ENU 4505L Nuclear Engineering Laboratory 1	4
ENU 6636 Fundamental Aspects of Reactor Shielding	3
ENV 4241 Fundamentals of Radiation Protection	4
PHY 4124 Modern Physics 2	3
PHY 4822L Atomic and Modern Physics Lab	2
PHS 4303 Nuclear Physics	3

C. Nuclear Plasmas and Fusion	
ENU 4103 Introduction to Nuclear Engineering 1	4
ENU 4704 Advanced Concepts for Nuclear Energy	4
Plasma Spectroscopy	4
ENU 6717 Thermonuclear Fusion	3
EEL 6541 Introduction to Plasmas	4
PHY 3123 Modern Physics 1	3
PHY 4124 Modern Physics 2	3

PHY 4822 Atomic and Modern Physics Lab 2
PHY 3323 Electricity and Magnetism 1 3
PHY 4324 Electricity and Magnetism 2 3
PHY 5325 Electricity and Magnetism Fields 3
or
EEL 3472 Electromagnetic Fields and Applications 1 4
EEL 3473 Electromagnetic Fields and Applications 2 3
PHY 3423 Optics 1 3
PHY 4424 Optics 2 3
PHY 4454L Optics Laboratory 2 2
or
EGM 4009 Introduction to Engineering Optics 4

COLLEGE REGULATIONS

English Requirement: Responsibility for the correct and effective use of his spoken and written English rests primarily upon the student. Any instructor in the College of Engineering may, at any time, with the approval of the Chairman of his department and the Dean of the College of Engineering, require a student who shows a deficiency in English to complete additional courses, over and above the curriculum requirements for his degree.

All students entering the College of Engineering except Engineering Technology students are required to take an English examination. This examination is to be taken by the student during his first regular quarter of enrollment in the College of Engineering after completing his English course requirements. All undergraduate students are to comply with this requirement. The examination is offered during the first two weeks of class. Information regarding this examination is available in the office of the Associate Dean of the College.

Students who do not pass this examination in two attempts are required to complete the course ENC 1102, 3 credits, or ENG 2540, 2 cr.; foreign students—ESL 2422, 2 to 5 credits, with a grade of "C" or better. This becomes a requirement for graduation, and ENC 1102, ENG 2540, and ESL 2422 is course work over and above the regular course work specified for the degree. A student classified 4 or 5 EG will only have one opportunity to pass this exam.

Thesis: A thesis is not required of candidates for the baccalaureate degree in the College of Engineering. However, exceptional students may be granted permission by the Dean of the College, upon recommendation of the chairman of the department, to undertake a thesis in lieu of required or elective work in the department in which he is enrolled. Not more than six quarter hours will be allowed for such thesis work.

Credit for Special Work.

1. Upon the recommendation of the chairman of the department and the approval of the Dean, a student during his course of study may do practical work under approved supervision in industry. By submitting a satisfactory report, based upon a previously approved outline, and by passing an examination, college credit may be received not to exceed 5 quarter hours. Students will register for the proper departmental course to receive such credit.

2. Where it is determined by the department concerned that an exceptional student may profit by supplementing his regular program of course work in a particular area, the student may register for special problems in his chosen field. The credit for such work should not exceed 9 quarter hours and requires approval of the Dean of the College of Engineering. To receive such credit, the student must register for the departmental course number 498.

A student may not have more than 12 quarter hours in total for work in industry, special problems, and High Honors project.

Elective Credit: It is the policy of the College that students, classified 3EG and higher, are not normally allowed to use freshman level courses for technical and non-technical elective credit. Foreign language credits at the freshman level may, within the discretion of the department, be credited as non-technical electives, provided that the student presents at least two quarters of work with a grade of "C" or better in the same language.

Average Required for Graduation: The requirement for graduation with a Bachelor's degree is a grade average of "C" or higher in all work taken after being classified as 3EG, and successful completion of all required courses.

Maintenance of Academic Standards: If at anytime after admission to the College of Engineering a student's honor point average falls below 2.00 he will be placed on college probation. A student may also be placed on probation if he does not maintain normal academic progress in the program of study in which he is engaged. The section of this catalog on 'Student Regulations' authorizes any college to set its own standards for exclusion of a student who fails or refuses to maintain normal academic progress. It is the policy of the College of Engineering that any undergraduate student who withdraws from the University for the second time will be automatically placed upon college probation which will continue until his graduation. Any student on college probation for this reason who withdraws for a third time from the University will be ineligible for further registration in the College of Engineering. Failure to satisfactorily complete the terms of his probation will result in the ineligibility of the student for further registration in the College of Engineering.

Advanced ROTC: Some engineering students may elect to enroll in the advanced ROTC program offered by the Army, Navy and the Air Force. Graduates of these programs are commissioned as second lieutenants or ensigns as described elsewhere in this catalog.

It is the policy of the Engineers' Council for Professional Development which accredits engineering curricula, that student enrollment in advanced ROTC programs represents a second career objective quite apart from that of professional engineering. Accordingly, advanced courses in Military Science are only acceptable on a limited basis, with department approval, for credit as technical or non-technical electives toward a degree in engineering.

Correspondence Courses: (See Student Academic Regulations — "Degrees and Graduation.")

A student in the College will not be permitted to register for and work on correspondence courses while enrolled in the College unless he has special permission of the Dean of the College and the Registrar. A student on probation must have permission of the Dean to register for correspondence courses when not enrolled in the College. A student who has been suspended will not be permitted to take correspondence courses for credit until the suspension is removed. A grade of "C" or better is required to receive credit for a correspondence course.

Dean's List:

Each quarter there is compiled a Dean's List of those students whose work for the preceding quarter has been of a high order. This recognition is accorded to students in the College of Engineering who:

a. Have earned a minimum of 14 hours of credit during the quarter;

b. Have made a 3.2 average during the quarter; and

c. Have no grade below "C" for the quarter.

Drop Policy: Students classified 1 and 2EG are allowed a total of three drops after the published drop-date. Similarly, students classified 3, 4, 5, and 6EG are allowed a total of two free drops. A student with an initial course load of 15 credits or more will be permitted to drop a course without penalty or use one of the free drops, provided this is done by the end of the sixth week of class and the total credits remaining are 12 or more. There is no petition appeal from this policy.

HONOR STUDENTS

Honor Student Designation: To be eligible for the designation of Honor Student in the College of Engineering, a student must have earned an honor point average of 3.30 or

higher in all work taken after being classified as 3EG, must have been registered in the College of Engineering for at least one quarter, and must have earned at the University of Florida, a minimum of 16 credit hours while classified as 3EG or higher. Also the academic record, as regards progress and conduct, must be such as to merit the recommendation of the major department. So long as the student maintains the necessary requirements he or she may, as an honor student, be granted special consideration in review of a petition to substitute courses.

Graduation with honors may be accomplished upon completion of all required work of the major department with the honor point average of 3.30 or higher and upon the recommendation of the major department.

Graduation with High Honors: An Honor Student may be invited to High Honors candidacy under the following condition:

1. The student must have secured an honor point average of at least 3.50 in all work taken after being classified as 3EG.
2. The faculty of the major department must recommend the student for invitation to High Honors after review of the record.

When the invitation to participate in High Honors work has been accepted in writing by a student, a High Honors Committee will be appointed by the Dean upon the recommendation of his department chairman. It shall be composed of two members of the faculty of the student's major department and one member of the University faculty selected from some other department. The Committee will approve the nature of the student's High Honors project and thesis. The project with thesis is not normally waived unless the student has an honor point average of 3.80, but this is discretionary with the Committee in exceptional cases. Not later than the second week of classes in the student's last quarter, a signed statement will be prepared by the Committee as to reasons for waiver of the project or thesis requirement for a student having an honor point average between 3.50 and 3.79. The Committee will consider the student's academic aims in the planning of his program, and will supervise the High Honors project and/or oral examination. The faculty of the major department will make recommendations based upon the Committee's findings when the candidate has satisfied all requirements for graduation with High Honors.

Graduation with High Honors may be accomplished upon completion of all required work of the major department with honor point average of at least 3.50 and upon the recommendation of the major department.

When a high honors project is a part of the program, credit may be obtained by prior registration in courses carrying the appropriate departmental prefix. Not more than a total of twelve credit hours will be allowed for high honors work, special projects, and practical work in industry; and registration for variable credit of one to six hours per quarter will be dependent upon committee recommendation.

COOPERATIVE EDUCATION PROGRAM

A number of industries, in cooperation with the College of Engineering, have established a cooperative program for engineering education which provides for industrial cooperation in educating the engineering student by providing employment in alternate quarters that are spent in learning techniques and industrial applications under supervision in selected industrial and Government facilities.

Students may apply for the cooperative program during their Freshman year by contacting the office of the Dean. Acceptance of the student is based on his academic standing and the availability of a cooperative assignment. Students in the cooperative program will require approximately five years to earn the selected engineering degree. The student normally completes his first and last years of study in residence at the University.

Community and Junior College students who have been on a cooperative education program may continue their arrangement with the same employer with the approval of the Dean's Office.

The quarters spent in industry are designed to give the student experience as an employee and are intended to be educational as well as productive. He is required to experience the usual employment procedures of interviews, job assignment, training, etc. He receives a salary commensurate with the assignment and his assignments increase in difficulty with each succeeding industrial period to parallel his academic advancement.

Upon assignment to an industry, the cooperative student becomes a member of a two-man team. He alternates with his partner between industrial assignments and his classroom schedules each quarter. One or the other member of the team is always in an industrial assignment so as to give the cooperating industry a continuity in the program.

Applications also may be made by men in industry who wish to complete their Engineering College course work and need credit for one year or more of college work to earn a degree.

Industrial organizations wishing to cooperate in this plan may communicate with the Dean's office.

Students will register immediately prior to each industrial phase of the program with the College of Engineering for participation in the Industries Cooperative Education Program.

LIFE SCIENCES, BIOMEDICAL ENGINEERING AND PRE-MEDICAL PROGRAMS

There is a growing need in our society for individuals trained in both engineering and the life sciences. Qualified individuals so trained will probably find a diversity of career paths open to them. This preparation particularly suits a candidate for admission to medical school, but it qualifies him equally to pursue an engineering career in the specialized fields of bioengineering or environmental engineering, or continue his education with graduate study in biomedical engineering, or the life sciences.

Several departments of the College, after consultation with the College of Medicine, have established special programs in this field. In general, these are of the same length as the conventional curriculum, and were achieved by substituting for groupings of electives twelve credits in organic chemistry and eleven in zoology. The student who is interested in these programs should consult his engineering department adviser at the earliest practicable date, since certain departments expect the student to begin his work in these specialized areas early in his undergraduate career.

Environmental Studies Minor Program

A program for a minor (with certificate) in Environmental Studies is available for anyone with a major in the following degree programs of the College of Engineering:

Agricultural Engineering
Bachelor of Science (Agricultural Engineering)
Chemical Engineering
Bachelor of Science in Chemical Engineering
Engineering Science, Mechanics and Aerospace Engineering
Bachelor of Science (Engineering Science)
Industrial and Systems Engineering
Bachelor of Science (Systems Engineering)
Mechanical Engineering
Bachelor of Science in Mechanical Engineering
Nuclear Engineering Sciences
Bachelor of Science (Nuclear Engineering Sciences)

The program is designed to be of interest to students concerned with environmental issues. Electives can be structured around an environmental theme, giving ex-

perience in an area that may expand career opportunities and make education more meaningful.

Students electing to participate in the Environmental Studies Minor Program would need to fulfill all College and Departmental requirements for the degree program in which he or she is enrolled. In addition, electives would be selected in consultation with his or her departmental advisor and the Environmental Studies Adviser (210 Bartram West) such that the requirements for the minor program are satisfied. These electives would consists of a minimum of 20 quarter hours of environmental courses, at least one from each of the Biological, Physical and Social Sciences with a minimum of 8 quarter hours in one.

The College of Engineering also offers a curriculum leading to the Bachelor of Science (Environmental Engineering Sciences) administered by the Department of Environmental Engineering Sciences. Students fulfilling the requirements for this degree would generally satisfy all requirements for the Environmental Studies Certificate. These students will be awarded the Certificate if they choose to request one.

Students interested in the minor should check with the Environmental Studies Office in 210 Bartram West and register their intended course of study to insure that the certificate will be received upon graduation.

FLORIDA ENGINEERING AND INDUSTRIAL EXPERIMENT STATION

Although the Florida Engineering and Industrial Experiment Station has developed a national and international reputation for excellence in research, its most important contributions are: (1) prosecution of research for the benefit of the State's industries, health, welfare, and public service, and (2) the intangible values offered to students participating in research projects while attaining their education.

Such opportunities, when grasped, bring the students into direct contact with the research specialists who constitute the faculty—the same faculty serve both the Station and the College. Not only do the students assist the professors working on specific research problems, but in many cases they make a direct contribution, on their own initiative, in meeting the great challenges of this era through research. The students thereby profit immeasurably from their association with the engineers engaged in research projects and from the opportunity to participate in using the principles of engineering for the solution of fundamental and applied problems.

Each year a series of "Special EIES Projects" are selected that are of high priority to Floridians. Examples are projects on regional water management, beach stabilization, pollution abatement, power plant site selection, stream improvement and technology transfer. The funding of these projects is often enhanced by support from municipal, state or federal agencies, as well as from industries and foundations.

All facilities of the College are available for instructional and research purposes. Graduate students may select fundamental problems under investigation in the research projects of the Station for the subject matter of theses that are required for the graduate degrees in engineering.

Whenever feasible, students are given an opportunity to observe and participate in research projects of the Station. Students who may benefit by additional laboratory work, and who have the necessary educational experience, may be given special permission to carry on individual experimentation in research.

MASTER OF ENGINEERING DEGREE

See the *Graduate Catalog.*

The Master of Engineering degree is designed to meet the needs of advanced technical training by the employees in Florida Industry, those students who wish additional training before entering industry, and those interested primarily in research or teaching.

The degree contains both a thesis and non-thesis option and is offered on campus and at Eglin Air Force Base. A student must have an undergraduate degree in engineering from an E.C.P.D. accredited curriculum, or equivalent, to qualify for this degree.

MASTER OF SCIENCE DEGREE

See the *Graduate School Catalog.*

All instructional departments in the College of Engineering offer graduate work leading to the degree Master of Science.

There is considerable demand for engineers with graduate degrees, particularly in research, design and development work, and teaching. The facilities of the College, including the Florida Engineering and Industrial Experiment Station, are exceptionally well adapted for graduate study. Any undergraduate student whose scholastic average is well above average is urged to consider seriously the possibility of doing graduate work. The Dean and the various members of the staff of the College will be happy to confer with students in regard to graduate study.

ENGINEER DEGREE

See the *Graduate School Catalog.*

Industry has found that engineers holding either the master's or doctor's degree contribute significantly in highly sophisticated operational and developmental projects and missions which require engineering teams with an unusually high level of technical competence. Many of the projects and problems require education beyond the master's level especially for those engineers who received their master's several years ago.

To meet the need of those engineers who need additional technical depth diversification in their education beyond the master's degree the College of Engineering offers the degree of Engineer.

This degree requires a minimum of 45 quarter hours of graduate work beyond the master's degree and thus falls midway between the master's and Ph.D. in the amount of work required. No minimum residence requirement is stipulated. It is not to be considered as a partial requirement toward the Ph.D. degree. The students' objective after the master's should be the Ph.D. or the Engineer degree.

DOCTOR OF PHILOSOPHY DEGREE

See the *Graduate School Catalog.*

The Doctor of Philosophy Degree is awarded for major work in Aerospace Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Engineering Mechanics, Environmental Engineering Sciences, Mechanical Engineering, Metallurgical Engineering, Nuclear Engineering, and Systems Engineering (Operation Research).

The general requirements for this degree are included in this catalog under the Graduate School. Further details may be secured from the Dean of the Graduate School or the Dean of the College of Engineering.

ADDS

ART
FINE ARTS
MUSIC
THEATRE
UNIVERSITY GALLERY

College of Fine Arts

GENERAL STATEMENT

The College of Fine Arts provides instruction for students who seek professional careers in the Fine Arts; it offers to other students of the University creative and cultural opportunities in these arts; and it performs appropriate related services for the citizens of Florida. The College has developed from the School of Architecture established in 1925. Its organization now includes Departments of Art, Music and Theatre; the Center for Latin American and Tropical Arts and the University Gallery.

PROGRAMS

The College offers professional curricula leading to undergraduate degrees in:

Art
Fine Arts
(Creative Photography, Painting, Printmaking, Drawing, Sculpture, History of Art, Crafts)
Graphic Design
Art Education
Music
Music Education
Theatre

The College also offers at the Graduate level professional programs in Art, Music, Music Education, and Theatre. Each undergraduate and graduate program stresses thorough mastery of the principles underlying its field and the development of professional skill in their creative application to practice.

Major programs of study in Art, Music and Theatre, leading to the degree of Bachelor of Arts, are offered by the departments of this college. Requirements for this degree are described under the College of Arts and Sciences.

General Courses: The College offers a number of courses open to all students of the University who wish to broaden their cultural background in the arts.

Public Programs: The College sponsors each year numerous public lectures, concerts, exhibits, festivals, special conferences, and clinics in which faculty and eminent visiting scholars and practitioners participate.

LIBRARY FACILITIES

The University Libraries, the Music Library, and the Fine Arts Library together provide an important working collection of publications and audio-visual materials for undergraduate and graduate studies. These resources include books, government documents, leading American and foreign periodicals, color prints, and slides. There is an extensive collection of published and recorded music of all types. Music listening facilities allow convenient use of these materials.

COUNSELING

Students planning to major in any program of study in the College of Fine Arts should see the proper departmental chairman or adviser as soon as possible.

The counseling program of the College is designed to make available to all students the services of faculty members highly qualified in their respective professions who can assist in the selection of a field of study, give understanding and sympathetic counsel regarding the student's personal or academic problems, and advise on the selection of employment after graduation.

STUDENT AID

Students interested in part-time employment, assistantships, fellowships, loans, prizes, and awards are referred to individual departments and information provided by the Student Financial Aid Office, University of Florida, Gainesville, Florida. Music performance scholarships are available.

FIELD TRIPS

Each year a number of field trips are arranged to give students an opportunity to broaden and extend their educational experience through study of outstanding works of art. Students frequently combine such studies with attendance at state and national meetings of the professional organizations in their respective fields.

TEACHER'S CERTIFICATE

In conjunction with the College of Education, the College of Fine Arts offers programs for teaching Art and Music in the public schools in grades K through 12. These programs are listed in both sections under the College of Education and the College of Fine Arts. For certification consult the College of Education or the Academic Adviser in Art or Music.

STUDENT WORK

The College reserves the right to retain student work for the purpose of record, exhibition, or instruction.

STUDENT ORGANIZATIONS

Student organizations take an active part in the educational program of the College. Included in these organizations are the Florida Art Society, the Music Educators National Conference student member Chapter No. 257, Kappa Kappa Psi, Tau Beta Sigma, Phi Mu Alpha Sinfonia, Sigma Alpha Iota, Pi Kappa Lambda, and student chapter of the American Guild of Organists. The College encourages and assists students in promoting close relations with professional groups and societies.

GRADUATE DEGREES

The College offers the degrees Master of Fine Arts with majors in Art, Music, and Theatre, and in cooperation with the College of Education, the Master in Education with a major in Music Education. To meet the needs and goals of each student, graduate programs are prepared individually in consultation with a designated member of the Graduate Faculty of the College.

Each department offers majors leading to the degree Master of Fine Arts.

Art: The degree Master of Fine Arts, major in Art provides a concentration of study in studio or history. Although holders of the Bachelor of Fine Arts degree may technically complete the requirements in one academic year, two years are normally required.

Music: The degree Master of Fine Arts, major in Music is designed primarily for those who wish to prepare themselves for careers as teachers in colleges and universities, performers, music historians, music critics, church musicians, composers and conductors. Recipients of this degree will be prepared to continue graduate study toward a doctoral degree in the various areas of music cited above.

The Department of Music cooperates with the College of Education in offering courses leading to the following degrees: Master of Education in music education (nonthesis degree); Master of Arts in Education in Music education (thesis degree); Specialist in Education: Doctor of Education

in college music teaching (emphasis in music education); Doctor of Philosophy in college music teaching (emphases in music history, literature and criticism, music theory and composition, performance practices, and music education).

The Master of Fine Arts degree in music (emphases in music history, literature and criticism, music theory and composition, applied music, sacred music, and conducting) is offered in the College of Fine Arts.

During the week of the student's first registration, he/she must take placement examinations in applied music, in music history and literature, in music theory, and in music education for the music education major. Music education majors must satisfy requirements for music teaching certification in Florida before the degree is awarded.

Theatre: The degree of Master of Fine Arts, major in Theatre is designed primarily for those interested in production oriented theatrical careers. The program provides advanced training in the craft skills essential to the theatre artist, and their subsequent application in public and studio production. Specialization is offered in the Directing-Acting area and in the area of Design and Technical Theatre.

For further information see the Graduate School catalog.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Fine Arts encourage applications from qualified students from all cultural, racial, religious and ethnic groups. Listed below are the specific requirements for admission to this College. It should be understood, however, that minimum requirements are given and that admission to the College is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. Limitations in staff, faculty and facilities make it necessary that the College establish quotas for the admission of students in most programs. Therefore, eligible applicants will be considered for admission to the College of Fine Arts within established quotas. A student's total record, including educational objective, pattern of courses previously completed, quality of previous academic record, and test data will be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential, on the basis of their total record, indicates the greatest likelihood of success in the program requested.

University College Students: To be eligible for admission to the College of Fine Arts, a University College student (except a student majoring in music) must have: 1) earned at least 93-96 quarter hours (varies with curricula) with the minimum average of "C" or higher in the courses required by the appropriate curriculum specified for Freshman and Sophomore years; and 2) passed all required preprofessional courses within those two years with a minimum grade average of "C". Admission to programs restricting enrollment because of space limitations may require that the student earn higher than the 2.0 (C) average minimum. Quotas will limit the admission of students based upon the overall academic record, grade point average and apparent potential for successful completion of the program. Music majors may apply to the College of Fine Arts after one quarter in the University College.

Minimum grades required in certain courses and other special requirements for admission to various curricula in the College of Fine Arts should be obtained from the Dean's Office or from the Departmental adviser.

Transfer Students: To be eligible for admission to the College of Fine Arts a transfer student must satisfy the minimum requirements for admission as specified in the ADMISSIONS section of this catalog. Additionally, the applicant must satisfy the following specific requirements for admission to the College of Fine Arts:

A. Transfers from four-year colleges.

Students attending four-year colleges should take courses similar to the appropriate program as outlined in this catalog.

B. Community College Transfers to Departments within the College.

1. *Curricula in Art:* Where possible the junior college program should include: two basic design courses, a course in color theory, two free-hand drawing courses, one basic painting course and a year of art history. Courses not available at the junior college will be taken after transfer to the University.

2. *Curricula in Music:* The junior college program should include two years of music theory, including ear training, sight singing and keyboard harmony; two years of applied music major study; and two years of ensemble. The primary criterion for admission to any music major program is proficiency in musical performance. Students are admitted to the program following completion of a satisfactory in-person or tape-recorded audition, and completion of a theory placement test.

3. *Curriculum in Theatre:* If available, theatre appreciation, oral interpretation, voice and articulation, acting, theatre practice, stage make-up and stage movement should be taken at the community college.

Provisional Admission: The professional programs of the College demand that preprofessional course-work begin with the Freshman year. Realizing that most of the schools from which transfer students come may not offer all such courses, the College provides an opportunity for admissable students to remove these deficiencies. Qualified transfer students, indicating potential, but not having completed all preprofessional prerequisites, may be admitted provisionally *based upon space available.* Due to limitations in space and faculty all qualified students may not be admissable. Students admitted provisionally will register for the courses necessary to eliminate deficiencies in the shortest time possible. Until these deficiencies are removed they will be required to maintain a "C" (2.00) average to be eligible for continued registration and may be prevented from registering for courses numbered 300 or above.

MAXIMUM AND MINIMUM LOADS

Fifteen to eighteen quarter hours in any regular quarter shall be considered a normal load. A student may be permitted to register for more than eighteen quarter hours when, in the opinion of his adviser, the quality of his record justifies this. The minimum load for a full-time student in the University during a regular quarter is 12 hours. At the time of registration a student, with the approval of the Dean, may register for less than twelve quarter hours. If a student wishes to drop courses during the quarter, he must have the approval of the College Committee on Student Petitions.

NORMAL ACADEMIC PROGRESS

The student will have maintained normal academic progress when he earns a minimum grade point of 2.0 (C) average for all work attempted while classified in the College. In addition, he is required to take courses in a sequence as specified by his departmental chairman or adviser. The student may be excluded from a program of study in the College if he fails or refuses to maintain normal academic progress.

DEAN'S HONOR LIST

Undergraduate students who demonstrate excellence in their academic work by completing a full course load (minimum of 12 quarter hours credit) in a quarter term and achieving a grade point average of 3.5 or better will earn a position on the Dean's Honor List. Students whose term averages are below 3.5 due to grades of I, X, etc. are not eligible.

GRADUATION REQUIREMENTS

To be eligible for graduation, the student must earn a minimum grade point average of 2.0 (C) for all work attempted in the appropriate curriculum while classified in the College. Courses taken while enrolled in another College may not apply toward the calculation of the average. Specific grade requirements for various curricula may be obtained from the department or Dean's Office.

Students planning to enter the Graduate School should maintain a 3.0 (B) average in Upper Division work.

GRADUATION WITH HONORS AND HIGH HONORS

The faculty will consider recommending students for graduation with HONORS or HIGH HONORS on the following criteria: (a) grade point average (b) distribution and quality of subject matter studied, (c) evaluation of the students by the faculty, and (d) other pertinent qualities of the student and his work.

The student will be considered for HONORS upon earning a minimum 3.2 academic average or for HIGH HONORS upon earning a 3.5 academic average. The average will be calculated on all work attempted while the student is classified in the College of Fine Arts. Transfer credits will be excluded from the average; HONORS or HIGH HONORS may be awarded upon a minimum of 72 quarter hour credits taken at the University of Florida.

I. CURRICULA IN ART

Grissom, E.E., *Chairman and Adviser*

The Department of Art offers undergraduate majors in the College of Fine Arts leading to degrees of Bachelor of Arts in Art, Bachelor of Fine Arts, Bachelor of Design and Bachelor of Design in Art Education. Junior and senior course requirements in the curricula are given below.

For the Freshman and Sophomore programs of study, consult the section of the catalog entitled The University College. For further information concerning any of these curricula see the Chairman of the Department of Art.

In addition, the Department of Art offers a major in art in the College of Arts and Sciences leading to the degree of Bachelor of Arts. Requirements for this degree are given in the listing of the College of Arts and Sciences.

The curricula in the College of Fine Arts are intended for students who plan to enter professional careers in fine arts or design, to teach art in the public schools or in the universities and colleges or to enter graduate study.

The major in art in the College of Arts and Sciences should be chosen by those students whose interest is in a liberal education with emphasis upon the visual arts.

1. Curricula in General Arts. Leading to the Degree of Bachelor of Arts in Art.

The curricula in General Arts provide for majors in (a) Fine Arts — creative photography, drawing, painting, printmaking and sculpture, (b) the History of Art, (c) Crafts, (d) Graphic Design, and (e) Art Education. All students entering the Department of Art at the undergraduate level will be enrolled in the curricula in General Arts. This degree program offers the student all the content advantages of the departments professional B.F.A./B.D. programs while reducing the actual time commitment by one quarter or 16 hours. (Also see (2) Curricula in Fine Arts (B.F.A.), (3) Curricula in Graphic Design (B.D.), and (4) Curricula in Art Education (B.D.).

[a] Major in Fine Arts

JUNIOR YEAR

	Credits
Studio Major	8
Art History	12
ART 3310C-3311C Intermediate Drawing 1 and 2	8
Art Electives (3400C, 3701C, 3600C, 3510C, 2110C)	12
*General Electives	4
Total	44

SENIOR YEAR

	Credits
Studio Major	10
Art History	4
ARH 4453 Mid 20th Century Art	4
*General Electives	8
*Electives	14
Total	40

*Electives must include a minimum of twelve credits outside the Department of Art in courses of a non-studio nature.

The studio major should consist of four courses (18 hours) in a single area e.g., creative photography, drawing, painting, printmaking, sculpture, etc.

[b] Major in Art History

JUNIOR YEAR

	Credits
Art History	16
ARH 3800 Criticism of Art	4
History of World Civilization or History of Philosophy	10
Foreign Language	15
Total	45

SENIOR YEAR

	Credits
Art History	20
Foreign Language	4
History of World Civilization or History of Philosophy	5
Electives	6
ARH 4453 Mid-20th Century Art	4
Total	39

[c] Major in Crafts

JUNIOR YEAR

	Credits
ART 2110C Beginning Ceramics	4
ART 3111C-3112C Intermediate Ceramics 1 and 2	8
ART 3150C-3151C Jewelry & Metalwork 1 and 2	8
Art History	12
*General Electives	12
Total	44

SENIOR YEAR

	Credits
ART 4113C Advanced Ceramics	10
ARH 4453 Mid-20th Century Art	4
Art History	4
ART 3600C Photography	4
ART 3701C Sculpture 1	4
*General Electives	14
Total	40

*Electives must include a minimum of twelve credits outside the Department of Art in courses of a non-studio nature.

[d] Major in Graphic Design

JUNIOR YEAR

	Credits
**ART 2280C Lettering	4
ART 3233C-3234C Layout 1 and 2	8
ART 3282C Typography	4
ART 3235C Graphic Design	4
ART 3310C-3311C Intermediate Drawing 1 and 2	8
Art History	12
**ART 3600C Photography	4
*Electives (ART 3830 [ART 303])	4
Total	48

SENIOR YEAR

	Credits
ART 4237C Advanced Graphic Design	5
ART 4239C Projects in Graphic Design 1	5

ART 4241C Projects in Graphic Design 2	5
Art History	4
ARH 4453 Mid-20th Century Art	4
*Electives	13
Total	36

*Electives must include a minimum of twelve credits outside the Department of Art in courses of a non-studio nature.
**ART 2280C and/or ART 3600C should, if possible, be completed in the sophomore year.

[e] Major in Art Education

The curriculum in Art Education is designed for students who plan to teach art in the public schools. Students completing this curriculum, which is offered in cooperation with the College of Education, are qualified for certification as teachers of art in the state of Florida. Students are urged to become familiar with the requirements as listed under the College of Education dealing with admission to the Advanced Professional Sequence.

JUNIOR YEAR

	Credits
ART 2280 Lettering	4
ART 2110C Beginning Ceramics	4
EDF 3110 Human Growth and Development	5
EDF 3514, 3604, 4542, or 4710	5
ARE 4242 Professional Studies in Art Education	5
ARE 4243 Professional Studies in Art Education	5
ARE 4244 Professional Studies in Art Education	6
ART 3701C Sculpture	4
*Art Electives (major)	4
Total	42

SENIOR YEAR

	Credits
ART 3400C Printmaking	4
EDE 4203 Elementary School Today	4
ESE 4011 The Secondary School Today	5
EDE 4943 The Practicum; K-12	16
*Art Electives (Major)	9
ARH 4453 Mid-20th Century Art	4
Total	42

*Art electives must include such advanced courses as are necessary to complete state certification requirements and must include a minimum of three closely related art department studio courses in a single advanced area (fine arts, crafts, etc.)

Students wishing to pursue more extensive study in the professional B.F.A./B.D. programs may request a degree transfer at the successful completion of their junior year. Basic requirements in support of such a request are: Senior standing; a "B" average; recommendation of major professor and a portfolio to be judged by a committee of three (two instructors from the major area and the chairman or his designated representative). Consult the department during junior year studies for this procedure.

2. Curricula in Fine Arts, leading to the Degree of Bachelor of Fine Arts.

The curricula in Fine Arts provide for majors in (a) Fine Arts — creative photography, drawing, painting, printmaking and sculpture, (b) the History of Art, and (c) Crafts — ceramics, jewelry and metalwork. Students who plan to enter a program of graduate study in art after receiving the baccalaureate degree are advised to register in one of these curricula. Upon completion of graduate work students entering these fields are qualified for positions in museums and art galleries, as instructors of art at the college and university level, or for independent activity as creative artists.

[a] Major in Fine Arts

JUNIOR YEAR

	Credits
ARH 3800 Criticism of Art	4
ART 3310C-3311C Intermediate Drawing 1 and 2	8
**ART 3510C-3520C Painting 1 and 2	8
ART 3400C Printmaking 1	4
ART 3701C Sculpture 1	4
History of Art	8
*Electives	14
Total	50

SENIOR YEAR

	Credits
ART 3600C Photography	4
ARH 4453 Mid-20th Century Art	4
ART 4312C Advanced Drawing	8
Advanced Painting, Photography, Printmaking or Sculpture	15
History of Art	8
*Electives	11
Total	50

*Electives must include a minimum of twelve credits outside the Department of Art in courses of a non-studio nature.
**The Example given above is for a major in painting. If a student were to major in photography, printmaking, sculpture, etc., he would substitute Photography 2 (ART 3601C), Printmaking 2 (ART 3401C), or Sculpture 2 (ART 3702C), etc., for Painting 2 (ART 3520C).

[b] Major in the History of Art

JUNIOR YEAR

	Credits
History of World Civilization or History of Philosophy	13
Foreign Language	10
History of Art	24
Electives	4
Total	51

SENIOR YEAR

	Credits
History of Philosophy or History of World Civilizations	10
Foreign Language	8
History of Art	20
ARH 4453 Mid-20th Century Art	4
Electives	7
Total	49

[c] Major in Crafts

JUNIOR YEAR

	Credits
ART 2110C Beginning Ceramics	4
ARH 3800 Criticism of Art	4
ART 3701C Sculpture 1	4
ART 3111C-3112C Intermediate Ceramics 1 and 2	8
ART 3150C-3151C-3158C Jewelry and Metalwork, 1, 2 and 3	12
History of Art	8
*Electives	9
Total	49

SENIOR YEAR

	Credits
ART 3600C Photography	4
ART 3702C Sculpture 2	4
ARH 4453 Mid-20th Century Art	4
Advanced Ceramics or Jewelry and Metalwork	15
History of Art	8
*Electives	16
Total	51

*Electives must include a minimum of twelve credits outside the Department of Art, in courses of a non-studio nature.

3. Curriculum in Graphic Design, leading to the Degree of Bachelor of Design.

The curriculum in Graphic Design is a professional program. Included in the curriculum are a series of courses in design, drawing and painting, the history and theory of art; and, in the professional field, lettering, layout, graphic design, photography and illustration. Students receiving the

Bachelor of Design degree in this curriculum are well qualified for professional careers in graphic design and related fields.

JUNIOR YEAR

	Credits
**ART 2280C Lettering	4
ART 3830C Methods and Materials of the Artist	4
ARH 3800 Criticism of Art	4
**ART 3600C Photography	4
ART 3233C-3234C Layout 1 and 2	8
ART 3282C Typography	4
ART 3235C Graphic Design	4
ART 3310C-3311C Intermediate Drawing 1 and 2	8
History of Art	8
*Electives	2
Total	50

SENIOR YEAR

	Credits
ART 3510C Painting 1	4
ARH 4453 Mid-20th Century Art	4
ART 4237C Advanced Graphic Design	5
ART 4239C Projects in Graphic Design 1	5
ART 4241C Projects in Graphic Design 2	5
History of Art	8
*Electives	19
Total	50

*Electives must include a minimum of twelve credits outside the Department of Art.

**ART 2280C and/or ART 3600C should, if possible, be completed in the Sophomore year.

4. Curriculum in Art Education (College of Fine Arts—College of Education), leading to the Degree of Bachelor of Design in Art Education.

The curriculum in Art Education is designed for students who plan to teach art in the public schools. Students completing this curriculum, which is offered in cooperation with the College of Education, are qualified for certification as teachers of art in the State of Florida. Students are urged to become familiar with the requirements as listed under the College of Education dealing with admission to the Advanced Professional Sequence.

JUNIOR YEAR

	Credits
ART 2280C Lettering	4
ART 2110C Beginning Ceramics	4
ART 3111C Intermediate Ceramics	4
EDF 3110 Human Growth and Development	5
EDF 3514, 3604, 4542, or 4710	5
ARE 4242 Professional Studies in Art Education	5
ARE 4243 Professional Studies in Art Education	5
ARE 4244 Professional Studies in Art Education	6
ART 3701C Sculpture	4
*Art Electives (Major)	8
Total	50

SENIOR YEAR

	Credits
ART 3400C Printmaking	4
ARH 4453 Mid-Twentieth Century Art	4
EDE 4203 Elementary School Today	4
ESE 4011 The Secondary School Today	5
*Art Electives (Major)	13
General Electives	4
EDE 4943 The Practicum; K-12	16
Total	50

*Art Electives must include such advanced courses as are necessary to complete state certification requirements and must include a minimum of three closely related art department studio courses in a single advanced area (fine arts, crafts, etc.)

II. CURRICULA IN MUSIC

Leading to the Degrees Bachelor of Music and Bachelor of Music Education.

Hale, J.P., *Adviser* (B.M.E.), Jaeger, I.C., *Assistant Advisor* (B.M.)

NOTE: Music majors must be admitted to the music major program by the Department of Music. Prospective majors should see the Department of Music Chairman as early as possible in their careers.

Requirements for the Degree: To qualify for a degree in music, a student must complete the courses listed below to the satisfaction of the music faculty. The faculty reserves the right to require a minimum grade of "C" in any course required for graduation.

A piano proficiency examination is required for all music majors. The student must take Piano Skills, until he has met this requirement. A diagnostic theory examination is required of all students entering the Upper Division.

1. Curriculum for Applied Instrumental Major. Bachelor of Music Degree.

JUNIOR YEAR

Music Performance Area	Credits
Applied major	9
Junior Recital is required	
Applied Minor	3
Ensemble	3
MVK 2121 Piano Skills (6)	1
Courses	
MUH 3211, 3212, 3213 History of Music	12
MUT 3611 Form and Analysis	4
MUT 4411 or 4421 Counterpoint	4
Three courses from Physical Sciences, Biological Sciences, Mathematics or PHS 4805	9
Electives	6
Total	51

SENIOR YEAR

Music Performance Area	Credits
Applied major	9
Senior Recital is required	
Applied Minor	3
Ensemble	3
Courses	
MUT 3321 Instrumentation and Arranging	4
MUG 4101 Conducting	4
MUS 4905 Projects and Problems	5
Electives	23
Total	51
Total minimum credits	198

2. Curriculum for Applied Voice Major. Bachelor of Music Degree.

JUNIOR YEAR

Music Performance Area	Credits
Applied major	9
Junior Recital is required	
Ensemble	3
Piano (1 year beyond MVK 2121) minimum credits	5
MVK 2121 Piano Skills (6)	1
Courses	
MUH 3211, 3212, 3213 History of Music	12
Foreign Language	10
Three courses from Physical Sciences, Biological Sciences, Mathematics, or PHS 4805	9
Electives	2
Total	51

SENIOR YEAR

Music Performance Area	Credits
Applied major	9
Senior Recital is required	
Ensemble	6
MUS 4201, 4202 Language and Diction for Singers	2

Courses
MUT 3611 Form and Analysis 4
MUT 4411 or 4421 Counterpoint 4
MUG 4101 Conducting 4
MUS 4905 Projects and Problems 5
Electives 20

Total 51

Total minimum credits 198

3. Curriculum in Theory and Composition. Bachelor of Music Degree.

JUNIOR YEAR

Music Performance Area *Credits*
Applied Principal, Including Recital 6
Ensemble 3
MVK 2121 Piano Skills (6) 1
Courses
MUH 3211, 3212, 3213 History of Music 12
MUT 4411, 4421 Counterpoint 8
Electives in Music 6
Electives 6
Three courses from Physical Sciences, Biological Sciences, Mathematics or PHS 4805 9

Total 51

SENIOR YEAR

Music Performance Area *Credits*
Ensemble 3
Courses
MUC 3201, 3202 Composition 8
MUT 3321, 3322 Instrumentation and Arranging 8
MUT 3611 Form and Analysis 4
MUS 4905 Projects and Problems (Senior Project) 5
Electives in Music 12
Electives 11

Total 51

Total minimum credits 198

4. Curriculum in History and Literature. Bachelor of Music Degree.

JUNIOR YEAR

Music Performance Area *Credits*
Applied Principal, Including Recital 6
Ensemble 4
MVK 2121 Piano Skills (6) 1
Courses
MUH 3211, 3212, 3213 History of Music 12
Foreign Language 14
Three courses from Physical Sciences, Biological Sciences, Mathematics or PHS 4805 9
Electives in Music 5

Total 51

SENIOR YEAR

Music Performance Area *Credits*
Ensemble 3
Courses
Four courses from MUL 3341, 3351, 3362, 4331 , 4361, 4371 16
Foreign Language 10
MUT 3611 Form and Analysis 4
Electives 12
MUS 4905 Project and Problems (Senior Project) 5
Electives in Music 7

Total 51

Total minimum credits 198

5. Curriculum in Church Music. Bachelor of Music Degree.

JUNIOR YEAR

Music Performance Area *Credits*
Applied Principal 9
Applied minor 3
Ensemble 3
MVK 2121 Piano Skills (6) 1
Courses
MUH 3211, 3212, 3213 History of Music 12
MUG 4101 Conducting 4
Foreign Language 10
Three courses from Physical Sciences, Biological Sciences, Mathematics or PHS 4805 9

Total 51

SENIOR YEAR

Music Performance Area *Credits*
Applied Principal 9
Senior Recital is required
Applied minor 3
Ensemble 3
Courses
MUR 3401 Organ Design and Literature 4
MUR 4801 Music in Worship 4
MUE 4411 Vocal Music Materials 4
MUT 4411 or 4421 M5C 403 or 404 Counterpoint 4
Electives 20

Total 51

Total minimum credits 198

NOTE: Electives must include at least two courses in music literature chosen from MUL 3341, 3351, 3362, 4331, 4361, 4371, and at least one course in religion, REL 340 or 353 or 364 or 407. REL 3202 or 3500 or 3420 or 4520.

Ordinarily the church music major will earn 36 credits (four years of study) in orgran or voice, with 6 credits in the other area of organ or voice as the applied minor.

6. Curriculum in Music Education. Bachelor of Music Education Degree.

The purpose of this curriculum is to prepare students to become musicians and music teachers both in private life and in the public schools. It is offered in cooperation with the College of Education and is based on a broad foundation in music. It includes work in theory of music, music literature, music education, applied music, and ensemble.

This is the program recommended for, and which best meets the needs of, the majority of music majors. It provides teaching certification, kindergarten through 12th grade, in Florida and in most other states through the National Council for the Accreditation of Teacher Education.

Piano Skills MVK 2111, 2111, 2111, 2121, 2121, 2121 must be taken each quarter until piano proficiency examination is passed; requirement must be met before application for Student Teaching.

JUNIOR YEAR

Music Performance Area *Credits*
Applied Principal, Incl. Recital 6
MVK 2121 Piano Skills (6) 1
MUE 2440, 2450, 2460 Instrumental Skills 6
Ensemble 3
Courses
MUH 3211, 3212, 3213 History of Music 12
MUE 3313, 3330 Music Education 10
EDF 3122 or 3135 or 3110 Foundations of Education 5
Three courses from Physical Sciences, Biological Sciences, Mathematics or PHS 4805 9

Total 52

SENIOR YEAR

Music Performance Area *Credits*
MUE 2470 Percussion Skills 2
MUG 4101 Conducting 4
Courses
MUE 4343 or 4404 or 4411 or 4412 Materials and Administration 4
EDF 3514 or 3604 or 4542 Foundations of Education 5

EDE 4203 Elementary School Today 4
ESE 4011 Secondary School Today 5
Approved Electives in Science and Mathematics 10
EDE 4943 and EDS 4943 Student Teaching 16

Total 50

Total minimum credits 198

The degree Bachelor of Arts in music is offered through the College of Arts and Sciences with the cooperation of the Department of Music. See the College of Arts and Sciences section of the catalog for the degree.

III. CURRICULUM IN THEATRE

Leading to the Degree of Bachelor of Fine Arts in Theatre.
Hooks, E.J., *Chairman and Adviser.*

The B.F.A. program is designed to provide a general comprehension of the theatre as a composite art including studies in theory and dramatic literature plus introductory work in several craft areas essential to dramatic production. The latter are included to provide for comprehension of the complex nature of the art and to insure proper integration of its several craft specialties. Areas of concentration are (1) Performance and Stage Direction (2) Scene Design and Lighting, and (3) Costume, and (4) Dance.

In addition to the BFA degree, the Department of Theatre offers a major in Theatre in the College of Arts and Sciences leading to the degree of Bachelor of Arts: also in cooperation with the Colleges of Education and Arts and Sciences the Department of Theatre offers a program in Language Arts Specialty with theatre emphasis, leading to the degree Bachelor of Arts Education. For all programs in Theatre students should consult the Department of Theatre's academic adviser.

JUNIOR YEAR

Basic Studies *Credits*
TPA 3200 Stagecraft 1 4
TPP 3650 Play Analysis 4
ENL 4135, 4136 Shakespeare 8
TPA 4230, 4231, 4232 Costume History 1, 2 8
MUL 2011 4

Specialization Sequence (Select one)

1. Performance
ORL 2002 Oral Performance 4
TPP 3111, 3112 Acting 2, 3 8
TPP 3511, 3512 Stage Movement 2, 3 8

2. Design-Tech:
TPA 3010 Stagecraft 2 4
TPA 3220 Technical Theatre Principles 4
TPA 4024 Stage Lighting 4
ARC 1115 Basic Drawing 4
ARC 1126 Architectural Drawing 1 4

3. Costume:
ARC 1115 or ART 1300 Basic Drawing 4
ARH 2050, 2051, 2052 Art History I, II, III 12
TPA 4232 Costume History 3 4

48

4. Dance:
Minimum of one course per quarter from 6-9
DAA 2101 Modern Dance III (2 hrs., repeatable)
DAA 3102 Modern Dance III (3 hrs., repeatable)
DAA 4103 Modern Dance IV (3 hrs., repeatable)
TPA 3200 Stagecraft 2 4
TPP 3650 Play Analysis 4
TPA 4230 Costume History I 4
MUL 2011 Introduction to Music 4
DAA 3700 Dance Composition 2
DAA 3500 Dance Production 3
THE 4905 Independent Study (Dance Composition) 2
DAN 4110 Seminar in Dance History and Philosophy ... 4
TPA 3290 Theatre Practice 3
TPA 3250 Stage Make-up 3
PET 3320 Applied Human Anatomy 4

46

SENIOR YEAR

Basic Studies *Credits*
*THE 4110, 4111, 4112 Theatre History 1, 2, 3 12
*TPP 3310, 3311 Directing 1, 2 8
*THE 4945 Repertory Theatre** 12
TPA 3290 Theatre Practice 3

Total 35

*Dance majors omit these courses.

Specialization Sequences (Select one)

1. Performance:
TPA 3010 Stagecraft 2 4
Elective (Voice if possible) 8

2. Design-Tech:
TPP 5084 Scenic Design 4
THE 4905 Individual Study (repeatable with change or content up to 8 hours) 8

3. Costume:
TPA 5048 Costume Design 4
THE 4905 Individual Study (repeatable with change of content up to 8 hours) 8

47

4. Dance:
Minimum of one course per quarter from 9
DAA 3102 Modern Dance III (3 hrs., repeatable)
DAA 4103 Modern Dance IV (3 hrs., repeatable)
TPP 3310 Directing I 4
THE 4945 Repertory Theatre 12
THE 4905 Independent Study (Readings in Dance History) 4
DAN 3500 Dance Production 2
THE 4905 Independent Study (Dance Composition III) .. 2
PET 3350 Applied Human Physiology 4
Electives selected with departmental approval 9

49

Upper Division Total 95
Total Minimum Degree Credits 191

**THE 4945 Repertory Theatre must be taken in the Summer quarter following the Junior or Senior year. No additional courses may be taken due to time requirements of SRT. (Summer Repertory Theatre).

School of Forest Resources and Conservation

FORESTRY
RANGE ECOSYSTEM MANAGEMENT
WILDLIFE ECOLOGY
RESOURCE CONSERVATION

School of Forest Resources and Conservation

College of Agriculture
Institute of Food and Agricultural Sciences

GENERAL STATEMENT

The primary objective of the School is to provide professional education in the many areas of forest, range, recreation and wildlife resources management and conservation and the allied fields. Special emphasis is given to instilling in students an aggressive attitude and a scientific approach to problems of the type they may encounter following graduation.

All work offered in the School meets the highest requirements of professional instruction. By selecting appropriate courses, graduates may qualify for membership in recognized professional organizations, such as: Society of American Foresters, Society for Range Management, and The Wildlife Society.

Programs of Study

All programs of the School are designed to provide students with an education of sufficient breadth to qualify them for advancement to positions of responsibility and leadership. In addition to the arts, humanities and social studies offered in the University College, students receive thorough training in the basic sciences and in essential phases of their chosen field.

Graduates of all programs will receive the degree Bachelor of Science in Forest Resources and Conservation (BSFRC). These programs are designed for students with interests in any of the many aspects of the management and conservation of forest, range, recreation and wildlife resources. All students must follow a core sequence designed to provide them with a thorough understanding of natural ecosystems and the impacts imposed upon such systems by the varied and multiple needs they serve. Also stressed are the interrelationships between the various professional disciplines needed for effective control, management and conservation of our various man-altered ecosystems.

In conjunction with the core, a student may follow a program of study designed to provide a beginning professional background in one of the following majors:

FORESTRY — Management and regulation of private, industrial and public forest land for the production of wood for the paper industry, the construction trade and a wide variety of industrial uses, and for the many services and activities accommodated by properly-managed forest resources, such as: wildlife habitat, watershed protection and grazing of livestock.

RANGE ECOSYSTEM MANAGEMENT — Management and utilization of range resources in forest and range lands, emphasizing the application of ecological principles, growth and utilization of the vegetation, and management for multiple benefits.

WILDLIFE ECOLOGY — Application of basic principles governing the abundance, distribution and ecology of all forms of wild animals, including those considered as game species. Insofar as wildlife is a product of the land, a broad ecological approach to ecosystem management is stressed.

RESOURCE CONSERVATION — Rather than pursuing one of the three majors listed above, the student may select courses in consultation with an assigned advisor to provide a broad or specific background in natural resources conservation.

The curriculum in Forest Products has been suspended until further notice.

Satisfactory completion of the prescribed courses in one of the majors, as certified by the assigned faculty advisor, will be noted on the student's transcript.

FACILITIES FOR INSTRUCTION AND RESEARCH

The School of Forest Resources and Conservation is headquartered in Newins-Ziegler Hall, which was completed in 1976. This modern and attractive structure has 31,000 square feet of net usable space. It contains two general classrooms, four teaching laboratories, two conference rooms, a self-learning facility, carrels for 22 graduate assistants, 22 specialized and 14 common use research laboratories. It also provides office space for all immediate School faculty.

The School has two other facilities on campus for research and graduate student instruction. One of these is a small office building, headhouse-shadehouse-greenhouse complex for research in forest genetics, forest nutrition, forest pathology, forest tree physiology, silviculture and forest products. The second is the Resource Management Systems Laboratory which is used for certain studies in freshwater and marine fisheries biology, and aspects of terrestrial ecology relating to wildlife, range and forest land use.

Varied facilities for carrying out its instructional and research objectives are available to the School. Several University-owned forests and range lands are available for field laboratories, demonstration and research work. The Welaka Research and Education Center, consisting of 2,500 acres of diversified forest lands, is located in Putnam County, Florida. The Austin Cary Memorial Demonstration Forest, consisting of 2,083 acres of flatwoods forest land located 8 miles northeast of Gainesville, is used as a field laboratory and demonstration and experimental forest where the student receives practical field experience. The School has a nursery, a small sawmill with planer and other necessary equipment, and a bolter saw located on the Austin Cary Forest. Other resource facilities located at this site include a fisheries laboratory and 10 experimental fish ponds. The 420-acre Chinsegut Hill Forest in Hernando County provides a setting for research in the conservation and perpetuation of scenic stands of old-growth pine timber. Diversified land-management operations are studied on the Beef Research Unit and the adjacent Mize Tract, which is being managed primarily for woodland grazing of livestock. Range operations research and instruction are also conducted at the 1,800 acre Agricultural Research Center at Ona, Florida. The Anhinga Roost Property, consisting of some 500 acres of shoreline and lake bottom of nearby Newnan's Lake, is available for research and instruction in freshwater fisheries and wildlife ecology.

Woodlands holdings, in excess of 250,000 acres, of five large pulp and paper companies and several smaller private forestry operations located within a radius of 20 miles of the campus are available for laboratory use. Two of the three National Forests of the state are less than fifty miles from the campus, and Paynes Prairie State Park, a unique 8,000-acre diversified marsh, prairie and hammock area, is within ten minutes travel time of the campus. Several other city, county and state parks and recreational areas, including unique natural areas such as the Devil's Millhopper and the San Felasco Hammock, are nearby and available for research and study by students interested in forest recreation, wildlife ecology and natural resources conservation.

Computer terminals connected to the University Computing Center and other modern computational equipment are available in the School to students enrolled in its programs. Also, mapping, aerial photo interpretation, drafting and analytical equipment are available.

There are several forest products industries located in the vicinity of Gainesville, namely: a wood-preservation plant, pole and cross-tie yard, pallet mill, charcoal briquetting plant, box and crate factory, and several sawmills. Wildlife management areas, numerous lakes and streams with varied management problems, ranches, and private and commercial forest holdings are located in the vicinity. Visits to these supplement the student's training in resource management conservation.

Resource publications are housed primarily in Hume Library, a unit of the University Library System. This is a comprehensive collection which is kept current by frequent additions. It includes all important serials as well as the publications of all major forest, fisheries, wildlife, and range research organizations.

REQUIREMENTS FOR ADMISSION

The University of Florida and the School of Forest Resources and Conservation encourage applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this school. It should be understood, however, that minimum requirements are given and that admission is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objective, pattern of courses previously completed, quality of previous academic record, and test data will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested. The following conditions will serve as a guide in expediting transfer to the School in compliance with the above requirements.

For admission to upper division status in the School of Forest Resources and Conservation, applicants must complete those general educational and preprofessional courses, or their equivalent, indicated in the University College section of this catalog. To assist the community college student in planning a program, the preprofessional requirements (in quarter-hour credits) may be satisfied by the following courses: calculus including analytic geometry (10 cr.); botany and zoology, or biology with laboratory (14 cr.); principles of economics (9 cr.); general and qualitative chemistry (12 cr.); general physics with laboratory (10 cr.); and statistics (4 cr.).

Direct admission will be granted to all applicants whose grade point average (GPA) is 2.3 or above and who have completed at least 96 quarter hours, including the above courses. Admission of students whose GPA is between 2.0 and 2.3 or who have not completed the preprofessional courses indicated above will be determined by the Admissions Committee.

Entry Time For Students: Students who have completed all of their preprofessional coursework should plan their initial enrollment into the School preferably during either the fall or spring quarter. Students who have not completed all of the preprofessional courses in time to enter the School during a fall or spring quarter are advised to contact the School of Forest Resources and Conservation for guidance as to the best time when they should enroll. Students entering the School during winter or summer quarters may enroll in prerequisite courses, nonprofessional electives or professional courses for which they have satisfied listed prerequisites.

GRADUATION

The Degree of Bachelor of Science in Forest Resources and Conservation is awarded to students who have completed 200 acceptable credits and have met the requirements of the curriculum. These requirements are specified in the University College section of this catalog and in the curricula listed below.

DEAN'S LIST AND GRADUATION WITH HONORS OR HIGH HONORS

For requirements see the general statement for Dean's List and Graduation With Honors or High Honors, College of Agriculture.

CURRICULUM

FOREST RESOURCES MANAGEMENT AND CONSERVATION

JUNIOR AND SENIOR YEARS

Required of all Students:

	Credits
FOR 3050 Introduction to Natural Ecosystems	6
FOR 3011 Biological Principles of Natural Resources Management	3
FOR 3421 Quantification in Natural Resources Management	5
FOR 3650 Decision Making in Natural Resources Management	3
FOR 4931 Seminar	1
FOR 4660 Natural Resources Management Policy	3
FOR 4623 Integrated Natural Resources Management	3
	24*

*In addition to the 24 hours listed here, all students in the School of Forest Resources and Conservation are required to complete the following: a minimum of 5 FOR and/or WIS courses; 4 credits of advanced communications, for example, technical writing, composition, journalism, public speaking.

Required of Forestry Majors:

	Credits
FOR 3140 Wood Structure, Properties and Use	4
FOR 3462 Introduction to Forest Surveying	5
FOR 3120 Dendrology	4
SOS 3022 General Soils	5
FOR 3333 Fundamentals of Forest Pathology	3
ENY 3541 Forest Insects	3
ETC 3331 Photogrammetry	3
FOR 3430 Forest Resources Measurement	5
FOR 4162 Foundations of Silviculture	5
FOR 4212 Forest Fire Control and Use	3
FOR 4541 Forest Economics	4
FOR 4621 Principles of Forest Management	3
FOR 4753 Forest Operations	4
MAN 3010 Principles of Management or PAD 4003 Introduction to Public Administration	4
Electives	21
	80

Graduation in this major satisfies the accreditation requirements of the Society of American Foresters and the educational requirements for becoming a Registered Forester in Florida.

Required of Wildlife Ecology Majors:

	Credits
FOR 3120 Dendrology	4
FOR 3123 Range Plants	4
WIS 3401 Fundamentals of Wildlife Ecology	3
WIS 4541 Terrestrial Wildlife Resources	5
WIS 4443 Wetlands Wildlife Resources	5
WIS 4220 Introduction to Fishery Science	4
ZOO 3303 Vertebrate Zoology	5
ZOO 3803 Field Problems in Vertebrate Zoology	4
ZOO 3203 Invertebrate Zoology	5
ZOO 3703 Functional Vertebrate Anatomy	5
PCB 4040 General Ecology, or BOT 3033 Introduction to Ecology	5

AGR 3303 Genetics	4
Electives	23
	80

Required of Range Ecosystem Management Majors:

	Credits
FOR 3123 Range Plants	4
FOR 4151 Range Ecology	5
FOR 4436 Range Inventory and Analysis	4
FOR 4624 Range Ecosystem Management	5
BOT 2710C Plant Taxonomy	3
BOT 3503 Elementary Plant Physiology	4
BOT 3503L Elementary Plant Physiology Lab	2
SOS 3022C General Soils	5
AGR 4231 Forage and Pasture Science	5
AEB 3103 Principles of Food and Resource Economics (5) *or* AEB 3133 Farm Firm Management (5) *or* AEB 3413 Economics of Environmental Quality (4) *or* AEB 4152 Farm Business Analysis (4) *or* FOR 4541 Forest Economics (4)	9
ANS 3007 General Animal Science (4) *or* ANS 4244 Beef Cattle Science (5) *or* ASG 3003 Introduction to Animal Science (5) *or* ASG 3403 Principles of Animal Nutrition (3) *or* ASG 3404 Applied Animal Nutrition (2)	9
FOR 3120 Dendrology (4) *or* WIS 3401 Fundamentals of Wildlife Ecology (3) *or* FOR 4162 Foundations of Silviculture (5)	7
Electives	14
	80

Required of Resource Conservation Majors:

Students seeking permission to work toward completing requirements for this major must prepare a plan of study to include an objective and list of coursework that will be taken prior to graduation. At least 45 credits of specifically named courses listed in the plan must be completed; otherwise the student will need to petition the faculty for approval to substitute coursework that does not appear on the original approved plan.

Total Junior-Senior Credits 104

All programs must have the approval of the assigned academic advisor and must be certified by the advisor prior to graduation.

MASTERS DEGREE

Courses are offered in the Graduate School leading either to the Master of Science degree or the Master of Forest Resources and Conservation. The former degree requires a thesis; the latter does not.

For the requirements for these degrees, see the catalog of the Graduate School.

PH.D DEGREE

This School has been authorized by the Board of Regents to plan a Ph.D. program with tracks in forest biology and wildlife ecology. Implementation decisions should be made in 1978-79. Currently, certain faculty of this School supervise Ph.D. students in other departments.

College of Health Related Professions

ALLIED HEALTH
CLINICAL AND COMMUNITY DIETETICS
CLINICAL PSYCHOLOGY
HEALTH AND HOSPITAL ADMINISTRATION
HEALTH RELATED PROFESSIONS
MEDICAL TECHNOLOGY
OCCUPATIONAL THERAPY
PHYSICAL THERAPY
REHABILITATION COUNSELING

College of Health Related Professions

GENERAL STATEMENT

The College of Health Related Professions, an academic unit of the J. Hillis Miller Health Center, provides an opportunity to train needed personnel representing various health careers. This College offers professional curricula leading to undergraduate degrees in allied health, clinical and community dietetics, medical technology, occupational therapy, and physical therapy; master's of health science degrees in occupational therapy and rehabilitation counseling; and a graduate program in health and hospital administration in cooperation with the College of Business Administration. (The Department of Clinical Psychology's academic program leads to the Ph.D. in Psychology and the department also offers a nationally accredited predoctoral internship in Clinical Psychology.) The Department of Communicative Disorders provides clinical and research opportunities for advanced students in speech pathology and audiology in the College of Arts and Sciences. A Rehabilitation Research Institute relates to ongoing research and assists members of the staff and students with research proposals and projects.

Three resources common to all these academic programs are accessibility of patients in the Shands Teaching Hospital and Clinics, availability of staff and facilities of the College of Medicine, and the presence of a wide range of established course offerings to be found in a large university. The effective operation of various medical, hospital and rehabilitation programs depends upon well trained and properly oriented personnel. The geographic location with the College of Medicine and the College of Nursing strengthens the respective programs of this College by making it possible for those who are to work together to be trained together.

REQUIREMENTS FOR ADMISSION

Listed below are the specific requirements for admission to the undergraduate programs offered in this College. Because these are undergraduate programs, selections are made from among those applicants who have not previously completed requirements for a baccalaureate degree. It should be understood that minimum requirements are listed. Admission to this college is a selective process, and satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objective, courses completed, quality of academic record, completion of SCAT test, and knowledge of that field will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the professional field selected.

The Dean and faculty of the College of Health Related Professions are aware of the need to prepare well qualified graduates in the various baccalaureate degree programs. Limitations in available staff, faculty and facilities make it necessary that the college establish quotas for the admission of students.

The student should consult the appropriate department chairman at the University as early as possible regarding his program. The sequence of professional courses in all programs begins only in the Fall quarter of the Junior year. The deadline for receipt of applications and credentials for admission in the Admissions Office for September enrollment is the preceding March 15.*

University College Students: To be eligible for admission to the College of Health Related Professions, a University College student must have: (1) earned at least 96 quarter hours of acceptable college credit with an overall average of 2.6 or higher on all college level work attempted; (2) completed all lower division courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years outlined in the University College section of this catalog; and (3) passed all required preprofessional courses within the lower division curriculum with an overall average of 2.6 or higher (with the exception of medical technology).

Transfer Students: To be eligible for admission to the College of Health Related Professions a student must satisfy the minimum requirements for admission to an Upper Division College set forth in the admissions section of this catalog. Each student should contact directly the specific department to which he wishes to gain admission. Additionally, the applicant must satisfy the following specific requirements for admission to the College of Health Related Professions: (1) Must have completed the courses required for the desired curriculum (or their equivalent with a 2.6 average or higher, with the exception of Medical Technology) as indicated in the program for the Freshman and Sophomore Years outlined in the University College section of this catalog, and (2) passed all required preprofessional courses with an overall average of 2.6 or higher (with the exception of medical Technology).

*Allied Health Program admits each quarter.

of 2.6 or higher (with the exception of medical Technology).

*Allied Health Program admits each quarter.

A. Students attending four year colleges, who wish to transfer after two years, should follow a program of general education and preprofessional courses similar to the Basic Curriculum for the Freshman and Sophomore Years for students planning to enter the College of Health Related Professions.

B. Junior College students should:

1. Complete the two-year college parallel program at the junior college.

2. Satisfy the general education requirements established for the junior college.

3. Complete the following courses which are prerequisite for admission to the undergraduate program as designated:

a. *Clinical and Community Dietetics*
General Chemistry and qualitative analysis
Organic chemistry, if available
Zoology or biology with laboratory (1 year course, i.e. three quarters or two semesters)
Botany (one quarter or one semester)
General psychology
Introduction to health related professions, if available
Basic nutrition course, if available

b. *Medical Technology*
General chemistry and qualitative analysis
Zoology or biology with laboratory (1 year course, i.e. 2 semesters or 3 quarters)
Organic chemistry
Quantitative analysis
Statistics
Introduction to health related professions, if available

c. *Occupational Therapy*
Zoology or biology with laboratory (1 year course, i.e. 2 semesters or 3 quarters)
General psychology
Psychology of personality
Studio arts and crafts, if available
Introduction to health related professions, if available

d. *Physical Therapy*
General chemistry and qualitative analysis
Physics
Zoology or biology with laboratory (1 year course, i.e. 2 semesters or 3 quarters)
General psychology
Personality development
Mathematics

Introduction to health related professions, if available

C. Health technician students should:

1. Have completed a two year associate degree in an approved health technician curriculum.
2. Be registered or licensed in his specialty area.
3. Have work experience in his health related specialty.

If the junior college does not offer courses that are required for admission to the student's selected curriculum in the College of Health Related Professions, the student should consider transfer to the University prior to graduation from the junior college provided he is eligible for admission to the University College. The student is encouraged to consult the appropriate Department Chairman at the University as early as possible regarding his program.

PROBATION, SUSPENSION, AND EXCLUSION FOR ACADEMIC REASONS

(1) If a student receives a "D" in a required course, the faculty may provide opportunity for the student to make up material through independent study.

(2) If a student receives two "D's" in required courses while in the program, the student will be required to withdraw and if space is available, repeat the course in which the second "D" was received the next time it is offered, and then may continue in the program.

(3) If a student receives an "E" in a required course, the student must withdraw from the program. If space is available, upon petition to the Department Faculty Committee, the student may be permitted to repeat the course the next time it is offered.

(4) If the student receives an "Unsatisfactory" grade in a required course graded on a "S-U" basis, opportunity for make-up will be provided.

(5) If a student receives two "Unsatisfactory" grades in a required course graded on a "S-U" basis, the student will be required to withdraw from the program.

In addition to University probation, students may be placed on probation by the College of Health Related Professions if they do not maintain normal academic progress in the program of study in which they are engaged.

A student with less than a 2.0 grade point average overall for work completed after acceptance into the College of Health Related Professions shall be placed on scholarship warning if he or she has a grade point deficit which is less than 10.

A student with less than a 2.0 grade point average overall for work completed after acceptance into the College of Health Related Professions shall be placed on scholarship probation if he or she has a grade point deficit of 10 or more, but less than 20.

GRADUATE PROGRAMS

Graduate work in health and hospital administration leads to the degree, Master of Business Administration. Major responsibility for the program rests with the College of Business Administration and the College of Health Related Professions. For requirements for this degree, consult the *Graduate School catalog.*

Graduate work in occupational therapy leads to the degree of Master of Health Science. For requirements for this degree, consult the *Graduate School catalog.*

Graduate work in rehabilitation counseling leads to the degree of Master of Health Science in Rehabilitation Counseling. For requirements for this degree, consult the *Graduate School catalog.*

Graduate work in clinical psychology leads to the degree of Doctor of Philosophy in psychology. For requirements for this degree, consult the *Graduate School catalog.*

HEALTH POLICIES

The College of Health Related Professions requires evidence of sound physical and mental health for admission.

At the beginning of the Junior and Senior years, personnel of the Department of Student Health will test each health related professions student for sensitivity to tuberculosis. Students will be charged for the sensitivity test. The Department of Student Health will verify immunization against diphtheria and tetanus.

Each student registered in clinical courses is required to have some form of hospitalization insurance. Fulltime students are eligible for the health insurance plans sponsored by the Student Government which may be purchased at the time of registration. This provides twelve month coverage.

HONORS

GRADUATION WITH HONORS

To graduate with honors, each program will identify only the top 20% of the students in its graduating class by Upper Division grade point average, which will be computed after acceptance into the College of Health Related Professions as an Upper Division student. A minimum of 60 quarter credits while enrolled in the College of Health Related Professions program is needed in order to be eligible. In addition, the individual program will establish additional criteria which must be met by this 20% to graduate with honors and if the students identified in the top academic 20% of the class do not qualify for departmental outstanding category, they will not be recommended for graduation with honors by the faculty. Thus, less than 20% would graduate with honors.

DEAN'S LIST

The Dean's List recognizes outstanding academic achievement at the completion of each quarter. Inclusion on the list is awarded to all students who during that term have earned a grade point average of 3.65 or higher on course work of at least 12 hours.

ALPHA ETA SOCIETY

Alpha Eta Society is a national honor society for students in the health related professions. The University of Florida's chapter is the first and charter member of the Society. Alpha Eta is an officially recognized campus organization and the first of its kind in the country. Members are chosen from any degree offering division of the College. The purpose of this society is to encourage and recognize scholarly and professional attainments and to promote the advancement of professional standards in the health related professions.

PROFESSIONAL ORGANIZATIONS AND CLUBS

Students are also eligible for other university honorary fraternities. In addition, each curriculum has professional clubs associated with it which all interested students are eligible to join.

EXPENSES

In addition to the usual University tuition and fees, students will be expected to furnish designated uniforms and shoes for clinical work. This will be necessary for students in occupational therapy, physical therapy, and clinical and community dietetics in the Junior and Senior year and for students in medical technology in the Senior year.

Field experience is required of students in occupational therapy and physical therapy. The student shall be responsible for financing this portion of his preparation. Costs vary depending upon location of the field assignment.

STUDENT AID

Students interested in part-time employment, assistantships, loans, prizes, and awards should apply to the office of Student Financial Aid, University of Florida, Gainesville, Florida. A limited amount of scholarship, traineeship, and loan assistance reserved exclusively for students in the College of Health Related Professions, is administered by the College. Application for such assistance is made to the Chairman of the department in which the student plans to major.

ALLIED HEALTH PROGRAM FOR HEALTH TECHNICIANS WITH ASSOCIATE DEGREES GENERAL STATEMENT

This program is designed for allied health personnel who have an associate of art, science, or applied science degree in specific health related programs such as respiratory therapy, dental hygiene, nursing, radiologic technology, etc. Two (2) years' work experience in the field is desirable.

The objective of this program is to expand the capabilities of associate degree health related personnel so that they may be able to assume greater responsibilities in the health care system by (1) developing capabilities in middle management supervisory skills in various health care facilities such as hospitals, nursing homes, health maintenance organizations, etc., and (2) helping develop competencies in individuals who wish to teach their technical specialties in the community colleges and/or other appropriate institutions.

CURRICULUM

Since students admitted in this program have varied backgrounds, each student's transcript will be evaluated and an individualized curriculum will be developed to maximize the student's previous academic background and vocational goals. College credits of students accepted with an associate of science or applied science degree will be credited only to this program. Students who wish to transfer to other University degree programs before completion of this program will have their credentials re-evaluated by the college offering the degree. No more than 64 semester (96 quarter) hours of credit transferred from or through a junior college may be applied toward the quantitative requirements for a University of Florida degree.

A selections committee determines the students who are to be accepted. Enrollment is based upon the limitations imposed by laboratory and clinical facilities. Admission to the University does not guarantee admission to this program.

The Bachelor of Health Science in Allied Health is awarded upon the satisfactory completion of the course requirements for this program.

UPPER DIVISION REQUIREMENTS FOR BACHELOR OF HEALTH SCIENCE IN ALLIED HEALTH FOR THE HEALTH TECHNICIAN WITH AN ASSOCIATE DEGREE:

The student admitted into the program must complete courses in sections I, II and III below.

I. The Core

	Credits
HCA 4112 The American Health Care System	3
HCA 4511 Supervisory Skills in Health Care Administration	3
HSC 4162 The Hospital and Related Organizations	4
H5C 4151 Legal and Ethical Aspects of Health Care Delivery	4
HSC 4390 Issues in Health Care Delivery	4
H5C 4391 Social Issues in Health Care	4
HCA 4802 Practicum	6
STA 3013 Statistics for the Social Sciences (or equivalent)	4
Total	32

II. Cognate Electives

The student must complete a minimum of 15 hours of cognate electives. The following are examples of cognate courses. Additional cognates will be developed in consultation with appropriate colleges.

	Credits
APB 3223 Basic Anatomy and Physiology	4
HSC 4221 Introduction to Evaluation in Health Sciences	3
HSC 4573 Research Methods in Health Sciences	4
HSC 4930 Special Topics: Case Studies in Health Care	3
HSC 4930 Special Topics: Death and Dying	4
EVT 4307 Special Methods and Materials for Teaching Vocational-Technical Health Occupations	4
EDH 6947 Practicum in College Teaching	8
RMI 4120 Health Insurance	4
MAN 3010 Principles of Management	4
ANT 4930 Special Topics: Rural Health Systems	3 to 5
HCA 4910 Humanistic Issues in Health Care	4
ENC 3343 Basic Technical Writing	3
PPE 4104 Introduction to Humanistic Psychology	4

III. General Education

The curriculum completed by individuals with an associate degree in a health technology varies greatly in the number of hours and types of general education courses. The number of courses and credits transferable to meet the University's general education requirements will be determined by the College of Health Related Professions Dean's Office. The University requires no less than 54 quarter hours of general education to be completed in order to graduate with the Bachelor of Health Science degree. The general education courses should be balanced to include work in five of the following areas: Mathematics, English, Social Sciences, Behavioral Studies, Humanities, Physical Sciences, and Biological Sciences, with a minimum of 9 credits in each of three areas.

IV. Other Electives

Additional courses may be taken to make up the total number of credits required to graduate. These courses may be those which would serve to strengthen the background knowledge of the student's technical health related competencies.

Maximum quarter credits accepted for transfer	96
Upper division credit requirements	94 to 104
Credit requirements for BHS degree	190 to 200

CLINICAL AND COMMUNITY DIETETICS GENERAL STATEMENT

Clinical and Community Dietetics offers a challenging career for young men and women who are interested in science, health care and food, and who like to work with people as individuals and groups. The selection of food to supply required nutrients for optimal health is an integral part of comprehensive health care. The dietitian brings to the health care team knowledge of the composition of food, knowledge of individual nutrient requirements throughout the life span and the ability to modify texture and nutrients in the diet as necessitated by disease.

The clinical dietitian is a specialist who works with the medical team and assumes responsibility for the nutritional component of comprehensive health care. The specialist estimates nutrient intakes and requirements in a variety of situations, determines how individual dietetic needs can be met, and instructs and counsels the individual patient. The clinical dietitian diagnoses nutritional problems and designs new dietetic approaches to the management of specific diseases. The individual may design the nutrition component of research protocols and implement the controlled diets necessary for medical research.

The community dietitian knows the community resources available for comprehensive health care, works with nutritionally vulnerable individuals and groups in the community, and functions as a member of the community health team. Clinical and community dietitians may serve as consultants, advisers, supervise supportive personnel and participate in educational activities in a variety of settings.

REGISTRATION

Satisfactory completion of the academic and clinical requirements is the basis for professional membership in the American Dietetic Association and eligibility to take the registration examination. Successful passing of this examination qualifies the candidate as a Registered Dietitian (R.D.). National registration is the basis for employment in civilian, military, state and federal hospitals throughout the United States.

CURRICULUM

The Bachelor of Health Science with a major in clinical and community dietetics is awarded upon completion of the course requirements in the curriculum. The program is designed to meet the requirements of the American Dietetic Association.

The sequence of professional courses in clinical and community dietetics begins in the Fall quarter of the academic year and requires seven quarters to complete.

A selections committee determines the students who are to be accepted. Enrollment is based upon the limitations imposed by laboratory and clinical facilities. Admission to the University does not guarantee admission to this curriculum. For specific requirements for undergraduate admission, refer to the section on "Requirements for Admission" to the College.

Students planning to major in Clinical and Community Dietetics should contact the Program Director at the earliest possible date by letter and/or personal interview. A personal interview is required of all applicants.

Selection of students to enter the program in the Fall will be accomplished during the Spring quarter. Application materials should be submitted by March 15.

REQUIREMENTS FOR BACHELOR OF HEALTH SCIENCE IN CLINICAL OR COMMUNITY DIETETICS

Freshman Year

	Credits
Social Sciences	9
BSC 2010-2011-2012 Biological Sciences Integrated Sequence	15
CHM 2040-2041-2042 General Chemistry	12
MGF 1113 Fundamental Mathematics	4
Physical Education	2
Electives	6
Total	48

SOPHOMORE YEAR

	Credits
Humanities	12
English	9
CHM 2043 General Chemistry	4
HSC 1001 Introduction to Health Related Professions	3
HUN 2201 Fundamentals of Nutrition	4
PSY 2013 General Psychology	4
Behavioral Studies	6
Electives	6
Total	48

JUNIOR YEAR

	Credits
CHM 3200 Organic Chemistry	4
CHM 3200L Organic Chemistry Laboratory	2
APB 3223 Basic Anatomy and Physiology	4
HUN 3122 Nutrition and Environmental Factors	4
MCB 3013 Basic Biology of Micro-organisms	5
FOS 4222 Food Microbiology	5
DIE 3124 Principles of Dietetic Management	4
BCH 3713 Introduction to Human Molecular Biology	3
FOS 3042 Introductory Food Science	4
HUN 3221 Introduction to Human Nutrition	4
Electives	9
Total	48

SENIOR YEAR

	Credits
DIE 4126 Food Systems Management	4
DIE 4175 Practicum in Food Systems Management	5
HUN 4241 Human Nutrition	4
DIE 4355 Practicum in Nutrition Throughout the Life Span	5
FOS 4311 Food Chemistry	5
DIE 4245 Nutrition and Disease	4
DIE 4275 Practicum in Nutrition and Disease	5
DIE 4516 Clinical and Community Dietetics Seminar	4
Total	36

4th Quarter (spring)

Community Dietetics Option	*Credits*
DIE 4316 Community Dietetics	5
DIE 4377 Practicum in Community Dietetics	5
HEW 4906 Individual Study in Clinical or Community Dietetics	4
	14

Clinical Dietetics Option	*Credits*
DIE 4251 Clinical Dietetics	5
DIE 4276 Practicum in Clinical Dietetics	5
HES 4906 Individual Study in Clinical or Community Dietetics	4
	14
Total	194

MEDICAL TECHNOLOGY GENERAL STATEMENT

Medical technology encompasses the largest single group of clinical laboratory workers. As the number and complexity of clinical laboratory examinations and procedures continue to increase, the need for well-trained medical technologists for service, teaching, research, and administrative positions increases. Many excellent employment opportunities are available for men and women with degrees in medical technology.

Medical technologists furnish physicians with laboratory data relative to the diagnosis and treatment of patients as well as in connection with medical education and research. They carry out the great majority of examinations of blood and other body fluids, isolation and identification of disease producing organisms, blood banking procedures, serological tests, and related laboratory studies. They prepare body tissues and other materials for further specialized examinations by pathologists and other clinical laboratory specialists. Most medical technologists work in hospitals and other clinical and public health laboratories and, in physicians' offices. They also have excellent employment opportunities in the biological and pharmaceutical firms, in veterinary medicine, and in many related areas.

LICENSURE:

All laboratory personnel in Florida must be licensed except those employed in federal government institutions and in laboratories operated by not more than 5 physicians for performance of procedures on their patients only. Re-

quirements for licensure under Florida Clinical Laboratory Law, Chapter 483, Florida Statutes, 1967, can be found in Rules Chap. 10D-41, State of Florida. Division of Health. Examinations for licensure are given semi-annually.

PROFESSIONAL ORGANIZATIONS

Lambda Tau is a national medical technology honor society with established chapters in undergraduate colleges and universities. Its purposes are: to develop a spirit of cooperation and unity among students entering any of the fields of medical laboratory technology; to stimulate a higher type of ideal for scholastic effort, to encourage research, and to help develop the professional character of the work itself; and to interest other students in these fields. Students maintaining a required scholastic average are eligible for membership.

Students enrolled in the professional curriculum may become student members of the American Society for Medical Technology.

CURRICULUM

The Bachelor of Health Science in Medical Technology is awarded upon the satisfactory completion of the course requirements in the medical technology curriculum. The curriculum has been approved by the Council of Medical Education of the American Medical Association. Satisfactory completion of these requirements is the basis for eligibility for the examination by the Registry of Medical Technologists of the American Society of Clinical Pathologists. Successful passing of this examination qualifies the candidate for certification as a Registered Medical Technologist, M.T. (A.S.C.P.), and for membership in the American Society for Medical Technology. This program also meets requirements for admission to licensure examinations in those states which regulate the practice of medical technology.

A Selections Committee determines the students who are to be accepted. Enrollment is based upon the limitations imposed by available laboratory and clinical facilities and materials. Admission to the University does not guarantee admission to this curriculum.

(Consult section of catalog entitled The Lower Division, Health Related Professions for listing of preprofessional course requirements).

REQUIREMENTS FOR BACHELOR OF HEALTH SCIENCE IN MEDICAL TECHNOLOGY:

FRESHMAN YEAR

	Credits
SSI Social Sciences	9
EH English	9
Behavioral Studies	3
*CHM 2045C-2046C-2057C General Chemistry and Qualitative Analysis	12
HSC 1001 Introduction to Health Related Professions	3
MLS 2030 Introduction to Medical Technology	2
Electives	8
Physical Education	2
Total	48

SOPHOMORE YEAR

	Credits
HUM The Humanities	12
**MAC 1132 Algebra and Trigonometry	5
BSC 2010C-2011C-2012C Biological Sciences - Integrated Sequence	12
CHM 3200-3200L Organic Chemistry	6
CHM 3120C Quantitative Analysis	5
STA 3023 Introduction to Statistics	4
Electives	4
	48

JUNIOR YEAR

	Credits
MLS 3308-3308L Fundamentals of Medical Technology-Hematology with laboratory	4
MLS 3627-3627L Fundamentals of Medical Technology-Clinical Chemistry with laboratory	5
MLS 3628-3628L Fundamentals of Medical Technology-Blood Banking with laboratory	4
MCB 3013-3013L Basic Biology of Microorganisms	5
PCB 4233-4233L Basic Immunology	5
MCB 4203-4203L Bacterial Pathogens	5
APB 3223 Basic Anatomy and Physiology	4
APB 3541 Parasitology	4
Electives	12
	48

Senior Year—(4 Quarters)	Credits
MLS 4830C-4831C-4832C-4833C Clinical Laboratory Practicum 1 - 3 - 5 - 7	20
MLS 4840C-4841C-4842C-4843C Clinical Laboratory Practicum 2 - 4 - 6 - 8	20
MLS 4850-4851-4852-4853 Principles of Clinical Laboratory Methodology 1 - 2 - 3 - 4	8
MLS 4934C-4935C-4936C Seminar in Medical Technology 1 - 2 - 3	3
Total	51

*CHM 2040-2041C-2042C-2043C may be substituted.
**Students who qualify should take an advanced mathematics course instead of MAC 1132. Consult counselor.

OCCUPATIONAL THERAPY GENERAL STATEMENT

Occupational therapy is an integral part of the comprehensive medical care and rehabilitation of patients with physical and mental illnesses. The occupational therapist uses creative arts, manual skills; recreational, educational and prevocational activities to assist in restoring ill and disabled persons to health. The activities for each patient are selected to meet his specific problems and needs.

A variety of activities are utilized in evaluation and treatment of patients with psychiatric disorders. For example, creative activities may be utilized in the treatment of a mentally ill person in order to stimulate emotional growth and to develop healthy, interpersonal relationships. Since the majority of the activities are manual in nature, occupational therapy for the physically handicapped patients is used mainly to improve functional hand and arm use. The activities selected may improve physical performance by providing specific exercise to improve coordination, to build endurance, or to restore motion and strength. Occupational therapy for children assists in the development of basic motor skills and in the acquisition of the manual and social skills required for school and play.

The occupational therapist also helps the severely disabled person to become independent in activities of daily living by adapting equipment and modifying tasks to meet the needs of the patient. Information related to a patient's potential for employment is obtained through the evaluation of the factors required for successful performance of various tasks relating to work skills and work habits.

Occupational therapists work closely with physicians and other members of the health team as they play important roles in helping those with disabilities and illnesses to function at their greatest potential. There are many

interesting and challenging opportunities for placement and for advancement in the profession.

REGISTRATION

To be eligible to work in occupational therapy in Florida a person must be registered under the provision of the Occupational Therapy Practice Act, Florida Statutes 468. State registration for occupational therapists is administered under the auspices of the Florida State Board of Medical Examiners. Examinations for registration under this Act are given semi-annually.

Satisfactory completion of the academic and clinical internship requirements is the basis for professional membership in the American Occupational Therapy Association and for eligibility to take the examination which qualifies the candidate as a registered occupational therapist (OTR). National registration is the basis for employment in civilian, military, state, and federal hospitals, rehabilitation centers, community clinics and schools for handicapped children throughout the United States and in most foreign countries.

PROFESSIONAL CLUBS AND ORGANIZATIONS

The Student Occupational Therapy Association of the University of Florida is officially recognized as a campus organization. Membership is open to all university students who are interested in occupational therapy. The purpose of SOTA is to stimulate interest in occupational therapy among prospective and currently enrolled students and among related professional community groups.

Students formally enrolled in the professional curriculum are eligible to become student members of the American Occupational Therapy Association and of the Florida Occupational Therapy Association.

CURRICULUM

The Bachelor of Health Science in Occupational Therapy is awarded upon completion of the course requirements in the occupational therapy curriculum. One of the curriculum requirements is the completion of a minimum of six months of clinical internship. Internship includes experience in psychiatric hospitals and approved centers offering experience with various types of physical disabilities and with all age groups.

The curriculum in occupational therapy is approved by the Council on Medical Education of the American Medical Association and by the American Occupational Therapy Association. The sequence of professional courses in occupational therapy begins only in the Fall quarter of each academic year. The Senior year sequence requires enrollment for all four academic quarters.

A Selections Committee determines the students who are to be accepted. Enrollment is based upon the limitations imposed by laboratory and clinical facilities and materials. Admission to the University does not guarantee admission to this curriculum. For specific requirements for undergraduate admission, refer to the section on "Requirements for Admission" to the College.

REQUIREMENTS FOR BACHELOR OF HEALTH SCIENCE IN OCCUPATIONAL THERAPY:

FRESHMAN YEAR

	Credits
SSI American Institutions	9
PSC, ISC The Physical Sciences	7
ENG English	9
BES Behavioral Studies	6
MFG 1113 Fundamental Mathematics	4
HSC 1001 Introduction to Health Related Professions	3
Physical Education	3
Electives	7
Total	48

SOPHOMORE YEAR

	Credits
HUM The Humanities	12
APB 21S0-21S1-21S3-21S0L The Biological Sciences	10
OTH 2000 Introduction to Occupational Therapy	2
PSY 2013 General Psychology	4
PPE 3004 Psychology of Personality	4
Electives	16
Total	48

JUNIOR YEAR

Three Quarters Enrollment Required	Credits
OTH 3010 Introduction to Clinical Procedures	2
OTH 3200 Applied Human Development	4
OTH 3110 Therapeutic Skills	9
OTH 4320 Problems of Psychosocial Dysfunction	4
OTH 4412 Musculoskeletal Anatomy	5
OTH 4421 Problems of Physical Dysfunction	4
OTH 4810-4811 Practicum	4
HSC 4550 Psychiatric Disorders	4
HSC 4540 Kinesiology	3
HSC 522 The Nervous System	4
APT 4500 General Pathology	4
Total	47

SENIOR YEAR

Four Quarters Enrollment Required	Credits
OTH 4321 Problems of Psychosocial Dysfunction	4
OTH 4422 Problems of Physical Dysfunction	4
OTH 4813 Practicum	2
OTH 4845 Internship (Spring Quarter)	12
OTH 4846 Internship (Summer Quarter)	12
OTH 4935 Occupational Therapy Seminar	4
HSC 4930 Special Topics or HES 4906 Individual Study in Health Related Professions	4
HSC 4516 Medical and Surgical Disorders	3
Electives	9
Total	54
Total	197

PHYSICAL THERAPY GENERAL STATEMENT

Physical therapy offers a challenging career for young men and women who are interested in scientific and medical fields and who like to work with people. Graduates have a wide choice of employment opportunities. It is one of a number of services closely allied with comprehensive health care and is an integral part of rehabilitation. It has, as its objective, optimum functional restoration of patients disabled by illness of injury.

Patients are referred for physical therapy by licensed physicians with whom the physical therapist works closely in carrying out evaluative procedures to determine the degree and extent of disability and in planning and administering the therapeutic program. Objectives of physical therapy are to assist in the alleviation of pain and restoration of function in order that the patients may be able to return to work, to school, and to their homes and to again become contributing members of their communities. Illustrative of patients — from new born to aged — referred for physical therapy are those whose disabilities result from fractures, nerve injuries, birth defects, brain damage, cardiac problems, "stroke," and

other diseases of bone, joint, circulatory, respiratory and neuromuscular systems.

Physical therapy requires knowledge and background in biological, physical and behavioral sciences such as psychology, gross and applied anatomy, physiology and pathology. It utilizes this knowledge in the application of therapeutic properties of exercise, heat, cold, electricity, ultra sound and massage. The physical therapist works closely with the physician, occupational therapist, nurse, speech and hearing therapist, psychologist, and other members of the health team as they combine their skills and knowledge for the welfare of the patient.

In addition, physical therapists work with medical personnel and community health organizations in contributing to planning programs of patient care and management. They may serve as consultants and advisers, supervise physical therapy and supportive personnel, and participate in educational activities in various settings.

REGISTRATION

To be eligible to work as a physical therapist in Florida a person must be at least 20 years old and registered under the provisions of The Physical Therapy Practice Act, Florida Statutes 486. State registration for physical therapists is administered under the auspices of the Florida State Board of Medical Examiners. Examinations for registration under this Act are given semi-annually.

PROFESSIONAL CLUBS AND ORGANIZATIONS

The University of Florida Student Physical Therapy Association is officially recognized as a campus organization. It is open to all students registered at the University who are interested in physical therapy. Its purpose is to promote personal and professional growth of its members and greater interest and understanding of physical therapy through participation in the activities of student and graduate professional organizations.

CURRICULUM

The Bachelor of Health Science in Physical Therapy is awarded upon satisfactory completion of the course requirements in the Physical Therapy Curriculum. This curriculum is accredited by the American Physical Therapy Association. This accreditation process is approved by the Council of Post-Secondary Accreditation. Courses must be taken in approved sequence. A Physical Therapy course in which a grade earned is "U" or below "C" will be considered completed unsatisfactorily and may not be counted towards degree requirements. To continue in the Curriculum students are expected to demonstrate interest, ability, and aptitude for professional responsibilities in Physical Therapy.

As a part of the academic requirements, students are assigned for one quarter (10 weeks) and an additional 5-week period of field experience in facilities approved by the faculty of the Department of Physical Therapy. No student will be awarded his degree or be qualified to practice physical therapy until he has satisfactorily completed these field experiences.

Satisfactory completion of these requirements is the basis for professional certification as a physical therapist: (1) in states which regulate the practice of Physical Therapy, (2) for membership in the American Physical Therapy Association, (3) for employment in general and specialized hospitals, rehabilitation centers, schools for handicapped children, public health programs, and facilities for the chronically ill, and (4) service as a commissioned officer in the Armed Services.

The sequence of professional courses in Physical Therapy will begin in the Fall quarter of each year.

Enrollment is based upon the limitations imposed by laboratory and clinical facilities and clinical materials. Admission to the University does not guarantee admission to the curriculum. A College admissions committee determines the students who are to be accepted. For the admission requirements refer to the information Requirements for Admission for the College of Health Realted Professions.

The deadline for receipt of all credentials in the Department for September enrollment is the preceding March 15.

Students planning to major in Physical Therapy should contact the Department at the earliest possible date. An academic advisement session in the Department, a SCAT test and completion of a college student information form are required of all applicants. All preprofessional courses must be completed by June of the year the student wishes to enter the Curriculum. (Consult section of catalog entitled The Lower Division, Health Related Professions for listing of preprofessional course requirements.)

A limited number of post-baccalaureate students are accepted each year for a special "accelerated" program from which they receive a second baccalaureate degree. Interested students should contact the Chairman of the Department for details.

REQUIREMENTS FOR BACHELOR OF HEALTH SCIENCE IN PHYSICAL THERAPY:

FRESHMAN YEAR

	Credits
English	9
Social Sciences	9
*CHM 2040C, 2041C, 2042C General Chemistry	12
*MAC 1132 Algebra & Trigonometry (or more advanced math)	5
*PSY 2013 General Psychology	4
*HSC 1001 Introduction to Health Related Professions	3
Physical Education	3
Total	45

SOPHOMORE YEAR

	Credits
BES Behavior Studies	6
HUM Humanities	12
*BSC 2010C Molecules and Cells	5
*BSC 2011C Organisms	5
*ZOO 3703C Functional Vertebrate Anatomy	5
*PHY 2004C, 2005C Applied Physics	10
*PPE 3004 Psychology of Personality	2
Electives	2
Total	49

JUNIOR YEAR

1st Quarter	Credits
CLP 4144 Abnormal Psychology	5
PHT 3001 Introduction to Physical Therapy and Community Health Concepts	3
PHT 3100C Human Anatomy	3
PHT 3213C Clinical Science I	5
PHT 3803 Physical Therapy in Community Facilities	1
Total	17

2nd Quarter	Credits
APB 3223, H5C 3520L Basic Anatomy and Physiology and lab	5
HES 4906 Individual Study (pathology)	2
HSC 4522 Nervous System	4
H5C 4540 Kinesiology	4
**PHT 3812 Junior Clinical Practicum or elective	2
Total	15-17

3rd Quarter	Credits
HSC 4516 Medical and Surgical Disorders	4
PHT 3214C Clinical Sciences 2	4
PHT 3215C Physical Modalities	5

PHT 3500 Community Health—Needs, Services, Structure and Implications 3
PHT 3813 Junior Clinical Practicum 2

Total 18

SENIOR YEAR

1st Quarter Credits
HSC 4517 Medical and Surgical Disorders 4
PHT 4111L Anatomy Dissection 4
PHT 4234C Therapeutic Procedures 1 4
PHT 4822 Clinical Practicum 3

Total 15

2nd Quarter Credits
PHT 4232C Therapeutic Procedures 2 4
PHT 4245 Survey of Patient Problems 3
PHT 4331C Survey of Surgical Procedures 4
PHT 4823 Clinical Practicum 3

Total 14

3rd Quarter Credits
PHT 4824 Internship 12

4th Quarter Credits
PHT 4824 Internship 6
PHT 4930 Seminar 5

Total 11

*These are also professional requirements
**Elective.

PRESS

College of Journalism And Communications

ADVERTISING
BROADCASTING
COMMUNICATION
JOURNALISM
PUBLIC RELATIONS
TECHNICAL COMMUNICATIONS
PUBLIC RELATIONS IN CRIMINAL JUSTICE

College of Journalism and Communications

The College of Journalism and Communications provides accredited programs in Advertising, Journalism (News-Editorial), Public Relations, and Radio-Television. It offers curricula leading to bachelor's degrees in three areas: Advertising, Broadcasting, and Journalism. A Public Relations sequence leads to a degree of Bachelor of Science in Journalism. The College also offers programs leading to the master's degree.

The divisions of the College are as follows: Department of Advertising and Public Relations, Department of Broadcasting, Department of Journalism, Graduate Division and Communication Research Center. Sequences are offered in advertising; broadcast news and public affairs, film production, and broadcast production under Broadcasting; reporting, editing, journalism education, and photojournalism under Journalism; public relations; technical communications; and public relations in criminal justice. Programs are available in agricultural journalism, environmental studies, Latin American studies, journalism for teachers and television for teachers.

Students gain practical experience working at the University's radio and television stations, on the college's alumni newspaper, on student publications, on the local daily newspaper, The Gainesville Sun, and/or dozens of internship programs.

Persons specializing in Reporting, Editing, Photojournalism, Journalism Education, Public Relations, Public Relations in Criminal Justice, and Technical Communications will take the appropriate sequence in the Bachelor of Science in Journalism program.

Students interested in radio and television will register for the program leading to the degree of Bachelor of Science in Broadcasting. Those wishing Advertising will take the program leading to the degree of Bachelor of Science in Advertising; work in this program includes both the print and electronic media.

SPECIAL PROGRAMS

AGRICULTURAL JOURNALISM: A special program leading to a Bachelor of Science Degree with emphasis on agricultural journalism is available. Interested students should consult with the Technical Communications Adviser and with the Dean of the College of Agriculture. Agriculture students seeking a single course in handling agriculture publicity and news for newspapers, magazines and radio-television are advised to register for Agricultural Communications.

JOURNALISM FOR TEACHERS: Special training and supervised research are available for Journalism teachers and others interested in work at the high school level. Students seeking state certification in Journalism should consult with the Department of Journalism.

TELEVISION FOR TEACHERS: The College offers instruction in the use of television production techniques and their utilization in informational and educational programs. Teachers interested in this program should consult with the Department of Broadcasting.

LATIN AMERICAN STUDIES: Students with a special interest may work for a certificate in Latin American studies. These students should consult with the assistant director of the Center for Latin American Studies; additional information about the program is given in the section titled "Center for Latin American Studies."

ENVIRONMENTAL STUDIES: Students interested in reporting, writing, editing or public relations work with any governmental or private organization dealing with the environment or environmental problems are advised to use their minor requirement to develop an area minor (20 or more quarter-hour credits) in environmental studies courses, such courses to be selected from an approved list available from any College adviser.

GRADUATE DEGREE

The College of Journalism and Communications, through the Graduate School, offers a program leading to the degree Master of Arts in Journalism and Communications with a major in communication. Graduate work is offered with specialization in advertising, communication research, international communication, journalism, media management or public relations. Consult the Graduate School catalog.

COMMUNICATION RESEARCH CENTER

For information about research activities and services of the College, please write the Director, Communication Research Center, College of Journalism and Communications, Gainesville, Fl. 32611.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Journalism and Communications encourage applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this college. It should be understood, however, that minimum requirements are given and that admission to this college is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objectives, pattern of courses previously completed, quality of previous academic record, and test data will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested.

Lower Division students: To be eligible for admission to the College of Journalism and Communications, a lower division student must have accomplished one of the following:

A. Earned 96 quarter hours of acceptable college credit with an overall average of C+ (2.5) or higher on all college level work attempted, or

B. Completed all general education courses required for the desired curriculum as shown in the program for the Freshman and Sophomore years outlined in this catalog, with an overall average of C+ (2.5) or higher on all work attempted.

C. Received the recommendation of the chairman of the department which the student plans to enter and the approval of the dean's office.

Transfer students: To be eligible for admission to the College of Journalism and Communications, a transfer student must satisfy the minimum requirements for admission to an Upper Division College that are set forth in the ADMISSIONS section of this catalog.

Transfer students are advised to note carefully the section headed "Professional Limit," below.

All Students: All students, whether from Lower Division, Florida community or junior colleges, or other four-year institutions, are required to complete, before graduation from the University of Florida, all courses listed under the "Lower Division" curriculum section, including preprofessional courses, or approved equivalents of these courses.

Provisional Admission: Within space limitations, students who do not meet precisely the admission requirements indicated in the appropriate section above may be granted provisional admission to the College of Journalism and Communications by the College's Committee on Admissions. The Dean of the College of Journalism and

Communications will specify the courses to be completed and minimum grade points to be earned by the student during the term of his or her provisional admission. Provisional status will be removed and the student fully admitted to the College of Journalism and Communications provided he or she fulfills the conditions set forth in his or her provisional admission. The student will be excluded from further enrollment in the College of Journalism and Communications if he or she fails to satisfy the conditions of his or her provisional admission.

TYPING ABILITY

All students entering the College must be able to typewrite. This ability is needed because many laboratory assignments must be typewritten. Students are expected to type a minimum of 20 words per minute.

ACADEMIC ADVISEMENT

The College maintains an advising service for students throughout the school year. Advisers in each department will talk with students about any academic matter. Each student, upon admission to the College, is assigned to an adviser for the remainder of his stay in the College. Students may change advisers, if they wish, by consulting the chairman of their department.

The most important fact a student can remember about academic advising is that he or she alone is responsible for earning his or her degree. While the College maintains its academic advisory service, and carefully works to keep accurate records of individual students, the student himself or herself is responsible for meeting all degree requirements.

Therefore, a careful reading of these requirements is advised, and each student is urged to visit his or her adviser at least once each quarter for help in checking on his or her progress.

Students are required to obtain an adviser's approval on all registration and/or drop-add cards in this college. Each student is advised to strictly observe the University's regulation on maximum and minimum course loads each quarter. This college requires each student to carry a minimum of 12 quarter hours, unless a waiver is approved by the student's department chairman.

MINOR

A portion of the student's elective credit hours in any sequence offered by the College must be chosen from outside the College.

Minor in Advertising and Public Relations

The Department of Advertising and Public Relations requires that the student and his adviser select these outside credit hours in one of two ways: (1) Single minor—20 hours, including 15 hours at the 3000 level or above (except that 1000 or 2000 level courses will be counted where they are prerequisites to upper level courses); (2) Split minor—22 credit hours from two departments, one of at least 12 credits and one of at least 10 credits, including 15 hours at the 3000 level or above.

Minor in Broadcasting

The minor in the Department of Broadcasting may be elected as, (1) a 20-hour concentration in one academic field, or (2) an area study recommended by the department to meet specific career goals. In either option, 15 of the 20 hours must be at the 3000 level or above.

Minor in Journalism

The minor in the Department of Journalism totals 20 hours, of which 15 must be in courses of 3000 level or above. The student must choose and develop one of two options which closest meet career ambitions, with written approval by the student's official adviser of the list of courses. Options are:

1. Secure all the credits in one other department outside the College or
2. Complete an Area Study, which is more flexible but permits a greater concentration of subject matter. Area studies available are Western Thought, Governmental Affairs, Urban Social Problems, Communication Sciences, Business, and Environment. Others can be arranged under advisement.

SATISFACTORY-UNSATISFACTORY

Undergraduate students in the College of Journalism and Communications may take no courses designated ADV, COM, FIL, JOU, MMC, PUR or RTV under the satisfactory-unsatisfactory (S-U) grade option, except courses which are offered only as S-U.

Students are encouraged to take elective courses S-U outside the College, subject to University rules published in the "Student Regulations" section of this catalog.

While no required course may be taken under the S-U option, courses for minor credit may be taken with the following restrictions (in addition to University restrictions):

1. The option may not be applied to any course below the 3000 level.
2. Not more than five credits of S-U work may be offered in fulfillment of the minor requirement.
3. No basic course (for example, SOC 2000, MAN 3010) may be offered for minor credit under S-U.

PROBATION

The College rules regarding probation are the same as the University's. These rules are described in the "Student Regulations" section of this catalog.

HONORS AND HIGH HONORS

Students achieving an overall grade point average of 3.50 on all work attempted while students in the College of Journalism and Communications will be graduated with honors.

The College Honors Committee will consider awarding high honors to students showing evidence of superior scholarship (at least 3.60 on all work attempted while students in the College of Journalism and Communications) and professional competency. Evidence of scholastic superiority should be supported by at least two letters from former or current instructors.

Evidence of professional competency will be in forms unique to each major area, viz., internships, editorships, journalistic writing, advertising and public relations campaigns, film television or radio productions, etc.

Students who believe their final grade point average will be at least 3.60 may apply to be considered for high honors at graduation. For specific information, students should confer with their departmental honors adviser. Judgment of evidence submitted will be made by the College Honors Committee in consultation with other pertinent faculty.

REQUIREMENTS FOR DEGREE

To earn a bachelor's degree, a student must:

1. Complete, with passing grades, all courses required by the college faculty and approved by the University.
2. Earn at least 192 credits, part of which may be accepted by transfer from another college or university. The last 45 of these credits must be earned while the student is enrolled in the College of Journalism and Communications and is enrolled in classes at the University of Florida.
3. Earn at least an average of C (2.0) in all work attempted while a student in the College of Journalism and Communications, and at least an average of C in all work

attempted in courses having the prefixes ADV, COM, FIL, JOU, MMC, PUR and RTV.

4. Earn a C or better in required English, required speech, Writing for Mass Communication, (or its equivalent), and Introduction to Broadcasting (or its equivalent), when required. Students earning below a C in any of these courses will be required to retake the course or its equivalent.

SECOND DEGREE

Students wishing to specialize in more than one field may earn a second bachelor's degree in this College by completing an additional 45 credits of work, with the necessary qualitative and residence requirements.

PROFESSIONAL LIMIT

The College stresses a broad background in liberal arts and sciences. The student spends about three fourths of his or her time on general background courses. The remaining one fourth involves the development of professional techniques in relation to this background knowledge.

Because the College insists on this broad background of general education, the number of professional credits to be applied toward graduation is limited. The College permits 55 professional credits (ADV, COM, FIL, JOU, MMC, PUR and RTV) to be applied toward graduation. Professional courses as defined by the College and accepted by transfer are counted toward the 55.

FINANCIAL AID

Students may earn money through undergraduate and graduate assistantships in this College. Undergraduate students may inquire at the office of the Dean; graduate students may inquire at the office of the Graduate Division of this College.

A limited number of scholarships, nearly all of them for Junior or Senior students, are available. Information may be obtained from the chairman of the Scholarship Committee of this College.

PROFESSIONAL AND HONORARY ORGANIZATIONS

Five national professional and honorary organizations select members from undergraduates in the College of Journalism and Communications: Society of Professional Journalists, Sigma Delta Chi; Women in Communications (formerly Theta Sigma Phi); Alpha Delta Sigma, students in advertising; and Kappa Tau Alpha, scholastic honorary for men and women. The Public Relations Student Society of America is sponsored by, and regulated by, the Public Relations Society of America.

The College is represented in these professional groups: American Association of Schools and Departments of Journalism, National Association of Educational Broadcasters, Broadcast Education Association, Florida Association of Broadcasters, Television Bureau of Advertising, Advertising Research Foundation, Florida District of the American Advertising Federation, Gainesville Advertising Federation, American Research Bureau, Television Information Office, Florida Scholastic Press Association, International Association of Business Communicators, Public Relations Society of America, Audit Bureau of Circulations, and Florida Magazine Association.

The state headquarters of the Florida Scholastic Press Association is located in the College of Journalism and Communications. The executive secretary of the association is a member of the faculty. A Summer institute for high school journalists is conducted in cooperation with the Division of Continuing Education.

NATIONAL STANDING OF COLLEGE

The College of Journalism and Communications at the University of Florida is the only such college in Florida with four complete programs accredited by the American Council on Education for Journalism. The curricula, faculty, facilities and alumni achievements are evaluated regularly by the ACEJ, whose membership includes the American Society of Newspaper Editors, the American Newspaper Publishers Association, the National Editorial Association, the Inland Press Association, and the National Association of Broadcasters, as well as journalism educators.

LOWER DIVISION CURRICULUM

Listed below are general requirements for all students seeking a degree from the College of Journalism and Communications. It is expected that students will complete, in their first two years, nearly all of the general education requirements and a considerable part of the Basic Distribution and Preprofessional Requirements. The remainder will be completed as early as possible upon admission to the College. A suggested course sequence is provided for the first two years in the lower division section of this catalog. This program can be altered to fit the student's circumstances but students are urged not to delay their foreign language or their quantitative option.

General Education Requirements

Courses	*Minimum credits*
*English (Must include at least two courses in composition and/or expository writing)	9
Mathematics	4
Social Sciences	9
Behavioral Studies	4
The Humanities	12
**Physical Sciences	6-9
**Biological Sciences	6-9

Basic Distribution Requirements

*English	4
Social Sciences	
1. ECO 2000, ECO 2013, ECO 2023, or ECP 3303 (Economics)	4
2. AMH 2010 and AMH 2020 (American History)	10
3. POS 2041 and POS 2112 (Political Science)	8
4. Additional social science electives	6

Preprofessional Requirements

*MMC 2100 Writing for Mass Communication (Student must have a typing proficiency of at least 20 words per minute; student may be exempted from and earn credit for course by passing a proficiency exam in writing at UF)	3
*SPC 3601 Public Speaking (Possible substitute courses if SPC 3601 is not available: SPC 2700; SPC 3420; SPC 3513; ORI 2001; ORI 2002; or TPP 2700	4
One Foreign Language	15
or	
Quantitative Option (Take any combination of the following courses: ACC 2001, ACC 2301, ACC 2401, STA 3013, or STA 3023, STA 3024, STA 4222 COP 3110, COP 3111, COP 3120	10

*Grade of C or higher must be earned.

**Three quarter hours of credit of either of these areas may be omitted.

ADVERTISING CURRICULUM

Leading to the Degree of Bachelor of Science in Advertising

Block 1: Required courses

These courses must be completed by all students:

	Credits
ADV 3000 Elements of Advertising	4

ADV 4101 Copywriting and Visualization 4
ADV 4103 Radio TV Advertising 4
ADV 4501 Advertising Research Techniques 4
ADV 4800 Advertising Campaigns 4
MAR 3023 Principles of Marketing 4
MMC 4200 Law of Mass Communication 4

Block 2: Professional Electives
Three or four courses to be chosen (minimum 11 hours)
ADV 4102 Advanced Copywriting 4
ADV 4200 Advertising Graphics and Production 4
ADV 4300 Media Planning 4
ADV 4400 International Advertising 4
ADV 4600 Advertising Agency Management 4
ADV 4700 Retail Advertising 4
ADV 4801 Co-op Work Experience ..... 1 to 5
ADV 4930 Special Study in Advertising ..... 1 to 5
ADV 4930 Individual Problems ..... 1 to 5
PUR 4000 Public Relations 4
PUR 4103 Business and Technical Communication 5
RTV 3210 Broadcast Production 1 3

Block 3: Professional Electives
One or two courses to be chosen (minimum 4 hours)
ADV 4500 Public Opinion Theory and Advertising 4
ADV 4931 Seminar: Ethics and Problems in Advertising . 4
RTV 3403 Mass Media Processes and Effects 4

Any professional work beyond 55 credit hours must be added to the 192 hours required for graduation.

BROADCASTING CURRICULUM

Leading to the Degree of Bachelor of Science in Broadcasting.

LOWER DIVISION

Required in addition to Lower Division and preprofessional courses required of all students:

	Credits
SOC 2000 Principles of Sociology	4
or	
PSY 2013 General Psychology	4
RTV 2000 Introduction to Broadcasting	3

UPPER DIVISION

Required of all Students

	Credits
RTV 3300 Broadcast News Writing	4
RTV 3403 Mass Media Processes and Effects	4
RTV 3100 Broadcast Writing	4
RTV 3210 Broadcast Production 1	3
RTV 4930 Seminar: Ethics and Problems in Broadcasting	4
MMC 4200 Law of Mass Communication	4
Total	30

The student will choose one of the following areas:

Broadcast News and Public Affairs

	Credits
FIL 4202 Cinematography for TV	4
RTV 4302 Radio-TV Reporting	4
JOU 3110 Fact Finding	3
Broadcast electives under faculty advisement and approval	4
Total	15

Film Production

	Credits
FIL 4202 Cinematography for TV	4
RTV 4311 Documentary for TV	4
RTV 4101 Advanced Film Writing	3
FIL 4200 Communicative Elements in Film Production	4
Total	15

Broadcast Production

	Credits
RTV 3220 Broadcast Production 2	3
RTV 3201 Broadcast Production 3	3
RTV 4202 Cinematography for TV or an elective course in broadcast production	4
RTV 4500 Broadcast Production Management	4
Total	14

In addition to the above requirements, students must take one course in the fine arts, such as ENG 3132, PHI 3800, REL 3116, MUL 2011, or THE 2000, and one course in any of the following areas: Education, Statistics, Sociology, Psychology, Marketing, Management, or Meteorology. Specific choices must be approved by a Broadcasting adviser.

Any professional work beyond 55 hours must be added to the 192 hours required for graduation.

JOURNALISM CURRICULUM

Leading to the Degree of Bachelor of Science in Journalism

UPPER DIVISION

Required of all students:

	Credits
JOU 3110 Fact Finding	3
JOU 3100 Reporting I	4
JOU 3101 Reporting II	4
*JOU 3601 Journalistic Photography I	4
JOU 4104 Public Affairs Reporting	4
JOU 4200 Newspaper Editing I	4
JOU 4700 Problems and Ethics of Journalism in Society	4
JOU 4946 Applied Journalism	5
MMC 4200 Law of Mass Communication	4
*Editing sequence students may substitute JOU 3204 Graphics of Journalism	3
Total	35-36

SPECIALIZATIONS

Student will select one area:

Reporting

Required:	Credits
JOU 4302 Public Opinion and Editorial Writing	4
Block 1: Choose One	
JOU 4004 History of Journalism	4
ADV 3000 Elements of Advertising	4
ADV 4500 Public Opinion Theory and Advertising	4
MMC 4301 World Communication Systems	4
MMC 4420 Applied Research in Mass Communications	3
PUR 4000 Public Relations	4
Block 2: Choose One	
JOU 4300 Magazine and Feature Writing	4
JOU 4301 Specialized Journalism	4
JOU 6108 Investigative Reporting	4
JOU 6109 Urban Affairs Reporting	4
Reporting Total	46-48

Editing

Block 1: Required	Credits
JOU 4202 Newspaper Editing II	4
PUR 4103 Business and Technical Communication	5
Block 2: Choose One	
ADV 4500 Public Opinion Theory and Advertising	4
JOU 4004 History of Journalism	4
JOU 4302 Public Opinion and Editorial Writing	4
MMC 4301 World Communication Systems	4
MMC 4420 Applied Research in Mass Communications	3
Editing Total	47-49

Photojournalism

Required:	Credits
JOU 4602 Journalistic Photography II	5
Block 1: Choose One	
ADV 3000 Elements of Advertising	4
ADV 4500 Public Opinion Theory and Advertising	4
JOU 4004 History of Journalism	4
JOU 4302 Public Opinion and Editorial Writing	4

MMC 4301 World Communication Systems 4
MMC 4420 Applied Reserach in Mass Communications . 3
PUR 4000 Public Relations 4
Block 2: Choose One
JOU 4300 Magazine and Feature Writing 4
JOU 4301 Specialized Journalism 4
JOU 6108 Investigative Reporting 4
JOU 6109 Urban Affairs Reporting 4

Photojournalism Total 47-49

Many students elect to earn credits by serving internships. Students who plan to seek internship credit are urged to use their elective hours within the college for that purpose. Students are limited to 10 quarter hours of internship and/or co-op work experience credit.

Journalism Education

Students take core courses, an area in methods of teaching journalism, 40 hours of education and a minor in English or speech. Students seeking state certification in journalism should consult with the Department of Journalism.

PUBLIC RELATIONS CURRICULUM

Leading to the Degree of Bachelor of Science in Journalism.

PROFESSIONAL COURSES REQUIRED OF ALL PR MAJORS *Credits*

JOU 3100 News Reporting I 4
PUR 3101 Editing and Graphics 4
ADV 4500 Public Opinion Theory and Advertising 4
or
JOU 4302 Public Opinion and Editorial Writing 4
MMC 4200 Law of Mass Communication 4
JOU 4300 Magazine and Feature Writing 4
PUR 4000 Public Relations 4
PUR 4001 Advanced Public Relations 4
PUR 4103 Business and Technical Communication 5

Total 33

PROFESSIONAL ELECTIVES

Take one course in each area below. Minimum total must be 10 hours.

Area 1
MMC 1000 Survey of Communications 3
RTV 2000 Introduction to Broadcasting 3
ADV 3000 Elements of Advertising 4
Area 2
PUR 4933 Seminar: Ethics and Problems in Public Relations 4
PUR 4932 Special Study in Public Relations ..... 1 to 5
PUR 4930 Individual Problems ..... 1 to 5
PUR 4949 Co-op Work Experience ..... 1 to 5
Area 3
Other 3000 or 4000-level professional course approved by adviser ..... 3 to 5

Any professional work beyond 55 hours must be added to the 192 hours required for graduation.

TECHNICAL COMMUNICATIONS CURRICULUM

Leading to the Degree of Bachelor of Science in Journalism.

This Curriculum is designed to provide specialists in communications for various technical fields. To fulfill the requirements for this degree, the student must take a core of journalism and other courses, as specified below, and select with his adviser at least 32 quarter hours of courses outside of the College of Journalism and Communications in the field of his specialization. The field of specialization is limited to technical areas. The area of specialization must be approved by a journalism adviser and the specialized courses worked out in conjunction with an adviser in the area of specialization. A total of 96 quarter hours in the Upper Division is required for the degree.

Courses *Credits*

JOU 3100 News Reporting I 4
PUR 3101 Editing and Graphics 4
JOU 3601 Journalistic Photography I 4
ENC 4356 Report Writing 4
ADV 4500 Public Opinion Theory and Advertising 4
MMC 4200 Law of Mass Communication 4
JOU 4300 Magazine and Feature Writing 4
PUR 4000 Public Relations 4
PUR 4103 Business and Technical Communication 5
*Field of Technical Specialization 32
Electives 24

Total 96

*Fulfills minor requirement. Any professional work beyond 55 hours must be added to the 192 hours required for graduation.

PUBLIC RELATIONS IN CRIMINAL JUSTICE CURRICULUM

Leading to the Degree of Bachelor of Science in Journalism.

UPPER DIVISION REQUIREMENTS

A minimum of 30 quarter hours must be completed from five of the following areas. These courses are ordinarily completed in the Junior and Senior years, but may be completed at any level as long as the necessary prerequisites are met. Courses taken to satisfy the Basic Distribution requirements, and courses taken to meet lower division general education requirements, may not be counted toward satisfying the requirement of this section. Nor will courses taken toward meeting the requirement of this area be counted toward a minor.

Area 1

ECO 2013 Basic Economics 1; ECO 2023 Basic Economics 2; MAN 3010 Principles of Management; MAN 3301 Personnel Management; MAN 4201 Principles of Organization; MAR 3023 Principles of Marketing.

Area 2

AMH 4041 Studies in American Civilization; ANT 4404 The Nature of Culture.

Area 3

CPO 2002 Comparative Politics; PO5 3144 Urban Politics; POS 3652 American Civil Liberties; PO5 4634, 4644, 4654 American Constitutional Law; PAD 4003 Introduction to Public Administration; PUP 4003 Issues in American Politics; POS 4683 Administration of Justice; PO5 4691 Social Effects of the Law; POS 4424 Legislative Politics.

Area 4

PSY 2013 General Psychology; SOP 3004 Social Psychology; PPE 3004 Psychology of Personality; SOP 4513 Human Conflict and Accord; SOP 4524 The Psychology of Small Group Behavior; CLP 4144 Abnormal Psychology.

Area 5

SOC 2000 Principles of Sociology; SOC 2020 (SY 202) Social Problems; SOC 3300 Community Growth and Change; SOC 3745 Minorities in American Society; SOC 4422 Complex Organizations; SOC 4850 Collective Behavior; SOC 4150 Criminology; SOC 4130 Juvenile Delinquency; SOC 4720 Black America: Current Problems.

Area 6

Any course in an upper division criminal justice sequence.

Professional Courses Required of ALL PRCJ Students

Credits

JOU 3100 News Reporting 1 4
ADV 4500 Public Opinion Theory and Advertising 4
MMC 4200 Law of Mass Communication 4

PUR 4000 Public Relations 4
PUR 4001 Advanced Public Relations 4

(Student will elect to complete a Broadcast or Print emphasis.)

Professional Courses Required for Students Who Desire a **Broadcast** Emphasis

	Credits
RTV 2000 Introduction to Broadcasting	3
RTV 3210 Broadcast Production 1	3
RTV 3220 Broadcast Production 2	3
RTV 3201 Broadcast Production 3	3

Professional Courses Required for Students Who Desire **Print** Emphasis

	Credits
PUR 3101 Editing and Graphics	4
JOU 4300 Magazine and Feature Writing	4
PUR 4103 Business and Technical Communication	5

PROFESSIONAL ELECTIVES FOR PRCJ MAJORS

Take one course in each area below. Minimum total must be 10 hours.

Area 7

MMC 1000 Survey of Communications 3
RTV 2000 Introduction to Broadcasting 3
ADV 3000 Elements of Advertising 4

Area 8

PUR 4933 Seminar: Ethics and Problems in Public Relations 4
PUR 4932 Special Study in Public Relations 3
PUR 4930 Individual Problems ..... 1 to 5
PUR 4949 Co-op Work Experience ..... 1 to 5

Area 9

Other 3000 or 4000-level professional course approved by adviser ..... 3 to 5

Any professional work beyond 55 hours must be added to the 192 hours required for graduation.

CRIMINAL JUSTICE MINOR

All students must complete a minimum of 20 quarter hours in an approved Criminal Justice sequence, either at the lower division or upper division level.

Center for Latin American Studies

The Center for Latin American Studies is the University unit responsible for directing or coordinating interdisciplinary instructional and research programs related to Latin America. It is a budgeted unit within the University and is administered by a director immediately responsible to the President reporting through the Vice President for Academic Affairs.

UNDERGRADUATE PROGRAM IN LATIN AMERICAN STUDIES

For students interested in Latin American Studies, the College of Arts and Sciences, the College of Journalism and Communications, the College of Business Administration, and the College of Education offer a special curriculum leading to the B.A. or B.S. degree and a Certificate in Latin American Studies. The program is designed to provide a broad cultural base for students who plan to do graduate work in the field or who plan careers with Latin American connections in business, government, or teaching. This course of study is particularly helpful to students interested in teaching about Latin America, in business dealing with Latin America, or positions with the U.S. Government in such agencies as the Department of State, the United States Information Agency, the Department of Commerce, the Department of Labor, and the Defense Department.

The Certificate Program is based on a departmental major leading to the Degree of Bachelor of Arts. In the College of Arts and Sciences, this major may be selected from the following fields: Anthropology, Economics, Geography, History, Political Science, Portuguese, Sociology and Spanish. Through special arrangements with the College of Journalism and Communications, the College of Education and the College of Business Administration, undergraduates in the departments of those colleges may take sufficient courses in Arts and Sciences to qualify for a B.S. Certificate in Latin American Studies. In all Colleges, the student must fulfill College and Departmental requirements for the B.A. or B.S. degree. In addition, these special requirements exist: (1) The student must include 36 hours of courses with Latin American emphasis. Courses taken within the major may be counted in fulfillment of this requirements, but language courses below the 2000 level may not be counted. (2) In addition to courses in the major, the student must take at least three courses outside of the major as part of the 36 hours. One course must be taken in the social sciences and history; one in literature, music, art, and the humanities; and one in either of these two course groups or in languages and linguistics or from among a group of professional courses. (3) Each certificate candidate must take the Center's undergraduate interdisciplinary seminar. (4) The student must demonstrate reading and speaking knowledge of Spanish or Portuguese. This last requirement may be satisfied either through course work or examination. The Certificate Program provides for a special concentration in Brazilian Area and Portuguese Language Studies.

All students completing the requirements of the special curriculum in Latin American Area Studies will receive a Certificate testifying to their completion of the requirements. Arrangements may be made so that students undertaking this curriculum, may, if desired, spend one or two terms taking classes at a Latin American University. The Universidad de los Andes Program in Bogota, Colombia is an excellent example of this alternative. (See "Study Abroad" below).

Students preferring to major directly in Latin American Studies at the B.A. level may apply to do so under the individual interdisciplinary option available through the College of Arts and Sciences.

Undergraduates interested in either of these programs including those enrolled in the University College, should consult with the Program Adviser, Room 319, Center for Latin American Studies, Grinter Hall, and with their departmental academic advisers. Those interested in the individual option of a B.A. major must also consult with the undergraduate office of the College of Arts and Sciences.

STUDY ABROAD

Agreement between the State University System of Florida and the Universidad de los Andes in Bogota, Colombia, allows students to study abroad for up to one year. The program is administered by the Center for Latin American Studies of the University of Florida.

While enrolled at the Colombian university, students are housed in private Colombian homes. They immerse themselves in the Spanish language and in the day-to-day living experience of Colombian culture. The Universidad de los Andes is organized similar to U.S. universities, and credits are transferrable. Total cost for the program amounts to about the same as would be paid by a student in residence at any university of the State University System of Florida. Bogota, the city in which the Universidad de los Andes is located, offers a variety of music, art, theater and museums. It enjoys a year-round, Spring-like climate. Interested students should contact the program adviser, 319 Grinter Hall.

The principal features of the program are:

Length of Program: Interested students may attend an *Intensive Course in Spanish For Foreign Students* from mid June to late July. In addition, they may take two regular semesters in residence, August to December and January through May.

Courses: All credits earned at Universidad de los Andes are transferrable to the Florida institution on the basis of prior approval of student's U.S. adviser or Registrar. Arts and Sciences majors must have prior approval of the Dean of the College.

Faculty: The greater part of the faculty of Universidad de los Andes have received graduate degrees or training in the United States or other foreign countries.

General Educational Requirements: Applicants should have completed at least 48 quarter hours of college or university work.

Academic Prerequisites: An academic average of 2.5 or better on all work completed at U.S. institutions, over a period of four quarters.

Language Prerequisites: A minimum of four quarters of college level Spanish, completed before departure, or a certificate stating that student has completed a functional Spanish language test, or permission of program director.

Tuition: Same as for Colombian students, approximately $200 US for the Summer Intensive Language course and approximately $400 US for each semester.

Housing: While in residence at Universidad de los Andes, U.S. students may be housed in approved private Colombian homes. Cost will be approximately $150 US per month for room, meals and laundry.

Travel Costs: Fall 1976, rates subject to change: Round trip Miami-Bogota, valid for one year $359, Gainesville-Bogota $441. Cheaper group travel rates are available for Summer Spanish course. APPLICATION DEADLINES, *Two months* prior to departure.

The Center is initiating a Portuguese Summer program in Rio de Janiero in 1978.

OTHER ACTIVITIES

In addition to the Bogota program, the Center sponsors bi-weekly colloquia, yearly conference, a major monograph and publications series, a bi-monthly Newsletter, and occasional art exhibits and concerts.

College of Law

THE COLLEGE OF LAW, founded in 1909, began its work in the Thomas Hall Dormitory for men. The Law Building, built in 1914, was one of the first permanent units on the campus. The College was accredited by the New York State Board of regents in 1917, admitted to membership in the Association of American Law Schools in 1920, and recognized as an approved school by the American Bar Association in 1925.

In January of 1969, the College occupied its new academic building. The academic building, in addition to classroom, courtroom, and administrative space, contains a library housing over 200,000 volumes with capacity for an additional 60,000 volumes.

The curriculum of the College is arranged so that the courses prescribed for the first year assure a sound foundation for further study. During the final quarters a wide election is afforded. The student, under this arrangement, may concentrate upon such subject areas as are of particular interest.

The goal of the College is to impart a thorough, scientific and practical knowledge of the law, together with an understanding of its role in a democratic society. It aims to develop keen, efficient lawyers who will respect the ideals and traditions of the profession. The policy of the College places emphasis upon practical skills as well as legal theory; problems of the modern world as well as historical perspective; the creative aspects in the drafting of documents as well as in the body of legal doctrines.

The College of Law offers a program leading to the degree of Juris Doctor. Admission is limited to those with a baccalaureate degree from a qualified institution who have achieved a satisfactory undergraduate grade point average and score on the Law School Admission Test (LSAT). All applicants must register with the Law School Data Assembly Service (SLDAS). Both the LSAT and LSDAS are administered by Educational Testing Service in Princeton, N.J. One can obtain the Law School Admission Bulletin with LSAT/LSDAS application from the Admissions Office of the University or the College of Law Administration Office.

The College also offers a course of instruction leading to the degree of Master of Laws in Taxation. Admission to the Masters program is limited to applicants who have attained the first degree in law from a school accredited by the Association of American Law Schools or the American Bar Association, and applicants are selected for admission on the basis of a demonstrated potential for successful completion of the program. In general, the LL.M. degree is earned by full-time study over the course of an academic year.

For further information on admission requirements, courses and programs, write the Director of Admissions, University of Florida, Gainesville, Florida, 32611.

LAW CENTER ASSOCIATION FINANCIAL AID

The College's private alumni association has established a revolving fund to provide low-interest loans to entering students who demonstrate financial need and great promise of academic success. Repayment on these loans may be started up to five years after the recipient's departure from the College, and the total repayment period may be extended to ten years.

Applicants seeking the financial aid described above must participate in the Graduate and Professional School Financial Aid Service (GAPSFAS). GAPSFAS applications may be obtained by writing to Box 2614, Educational Testing Service, Princeton, N.J. 08540, or the College of Law Administration Office. The GAPSFAS report must be received on or before November 1, for the following Spring entrants and March 1, for the following Fall entrants. Interested minority applicants should communicate directly with the Coordinator of Minority Affairs or the College of Law for information.

College of Medicine

The College of Medicine, a unit of the J. Hillis Miller Health Center, began operations in 1956 and is located on the south end of the campus. This location in direct proximity to University facilities offers many opportunities to engage resources of the University in the educational and investigative programs of the College. For example, there exist joint programs with the Division of Biological Sciences, and the College of Engineering as well as with the other colleges of the Health Center. Also, computational and statistical services, are available through University resources.

The College of Medicine is responsible for several major educational programs. Foremost is the four year program leading to the M.D. degree into which 118 students are accepted annually. After graduation the young physicians enter residency programs. Presently, the College of Medicine offers approximately 300 such positions. The basic medical science departments offer the Ph.D. degree in the Medical Sciences with specialization in Anatomy, Biochemistry and Molecular Biology, Immunology and Medical Microbiology, Neuroscience, Pathology, Pharmacology and Therapeutics, and Physiology.

Further training is offered through a number of positions for post-doctoral research fellows in all basic science and clinical departments. The clinical departments conduct frequent seminars as part of their continuing education program for practicing physicians. In addition, some of the clinical departments have assumed responsibility for community medicine programs in communities surrounding Gainesville.

The faculty is dedicated to a teaching program of high quality. Close faculty-student relationship is encouraged by the design of the four year curriculum. The educational program is structured to enable the graduate to choose any career offered in medicine. Therefore, emphasis is placed on understanding of fundamental biological principles, and their relevance for the practice of medicine.

Students intending to apply for admission should complete the requirements for a Bachelor's degree although a limited number of exceptional students may be considered for admission at the end of their third year of college. An applicant to the College of Medicine must have personal qualities of the highest order — character, integrity, intellectual honesty, responsibility, maturity, initiative, and aptitude. In addition, the students must have demonstrated superior intellectual achievement during undergraduate work.

An honors program exists for undergraduate students who have chosen a career in the medical profession and who have demonstrated both superior scholastic ability and personal development during their first two college years. Students are chosen for the program at the end of their Sophomore year. The third year consists of 2/3 arts and sciences and 1/3 college of medicine credit. The latter is offered in a seminar form. Conversely, the fourth year is partitioned into 1/3 arts and sciences - 2/3 college of medicine. Since the College of Arts and Sciences grants academic credit for all of the third year work and part of the fourth year work, a participating student receives a BS Degree and completes one year of medical school in a total of four years. Early entry into medically oriented instruction with sensible acceleration of education is obtained without loss of the important components of a broad education. The program is limited in size to 15 students per year in order to retain the discussion seminar format.

Unusually gifted students may enter a combined M.D.-Ph.D. program which offers a unique opportunity of integrating clinical experience with competence in basic biomedical research. This program is a consequence of the dependence of the practice of medicine on scientific advances in the biological sciences.

Since 1971, the College of Medicine has developed, with Florida State and Florida A and M Universities, an innovative, interinstitutional plan for medical education which integrates the first year of the medical school curriculum with the undergraduate degree programs of FSU and FAMU. Students receiving *secured status* from the FSU-FAMU Program in Medical Sciences are guaranteed entry into the second year of the medical curriculum.

The College of Medicine has responsibility for patient care, teaching and research at the Veterans Administration Hospital located next to the J. Hillis Miller Health Center. A formal affiliation was established with the Jacksonville Hospitals Educational Program in 1969 for the purpose of providing combined educational and clinical resources. In addition the College is involved in several projects concerned with Community Health Care.

Further detailed information will be found in the College of Medicine or the Graduate School catalogs. Copies may be obtained by writing to the Registrar, University of Florida, Gainesville, Florida 32611.

PHYSICIAN'S ASSISTANT PROGRAM

GENERAL STATEMENT

The Physician's Assistant Program offered by the College of Medicine, University of Florida, is designed to prepare health care professionals who will perform certain functions traditionally performed by licensed physicians. The primary objective of the program is to prepare a physician's assistant who provides comprehensive health care, under the supervision of a licensed physician, to family members at various points along the age continuum. The curriculum of this program offers the student in-depth content in the basic and medical sciences.

The Florida legislature in the Spring of 1971, amended the Medical Practice Act to define and regulate the functions of physician's assistants. The Program in the College of Medicine began in the Fall of 1972. In 1972, the National Board of Medical Examiners, with the concurrence and cooperation of the American Medical Associations' Council on Health Manpower, embarked upon a national program to certify assistants to the primary care physician. This program was awarded full accreditation by the American Medical Association's Council on Medical Education in 1977.

An admissions committee determines the students who are to be selected. Enrollment is based on limitations imposed by laboratory and clinical facilities and materials. Admission to the physician's assistant major is open in the Fall Quarter only.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Medicine encourage applications from qualified applicants of both sexes from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to the Physician's Assistant Program. It should be understood, however, that minimum requirements are given and that admission to this program is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission.

To be eligible for admission to the College of Medicine Physician's Assistant Program, an undergraduate or postbaccalaureate student must:

1. Complete all lower division courses in the PRE-PHYSICIAN'S ASSISTANT CURRICULUM described in this catalog.
2. Pass all required preprofessional courses at a "C" or better level. **NOTE:** CLEP credit does not substitute for any of the preprofessional requirements.
3. Show evidence of sound physical and mental health.
4. Have one year of direct patient care contact.

In addition to the above requirements, each applicant must satisfy the requirements listed under the following sections:

A. FLORIDA PUBLIC JUNIOR COLLEGE GRADUATES or
B. APPLICANTS OTHER THAN FLORIDA PUBLIC JUNIOR COLLEGE GRADUATES, as appropriate.

A. Florida Public Junior College Graduates

The University of Florida subscribes to the Articulation Agreement between the State universities and public junior colleges of Florida. Under this agreement, any graduate of a State approved Florida public junior college is eligible for admission to the university if the student has completed the university parallel program and received the Associate in Arts degree, provided the degree has been awarded on the basis of the following:

1. At least 60 semester hours (90 quarter hours) of academic work exclusive of occupational courses;
2. An approved general education program of at least 36 semester hours (54 quarter hours);
3. A grade point average of at least 2.0 on a 4.0 system on all college level academic courses attempted.

NOTE: All applicants for admission to the University of Florida must present scores on an acceptable general ability test. In the case of applicants who have graduated from a Florida public junior college with the Associate in Arts degree, this information is required for counseling and research purposes only and the score achieved on the test will not be a criterion for admission. However, the required test information must be received by the Admissions Office before an application can be given final approval.

Within space and fiscal limitations, applicants who have satisfied the above minimum requirements will be considered for admission at the Junior level. Such students may be required to take additional preprofessional courses not completed at the junior college. However, such courses will not reduce the number of credits required in the Upper Division for a degree.

B. Applicants Other Than Florida Public Junior College Graduates

This section applies to students seeking to transfer from a Florida public junior college without an Associate in Arts degree in a university parallel program and to all undergraduate transfer applicants from other colleges or universities.

1. Advanced standing credit: An applicant must present a minimum of 64 semester hours (or 96 quarter hours) of acceptable college courses, not more than four semester hours of which are in Military Science and/or basic required Physical Education as credit for advanced standing.
2. Specific course requirements: An applicant must present the courses listed as required for this program, or acceptable substitutes, as part of the courses offered for advanced standing credit. (An applicant lacking some of the specific course requirements may be permitted to enroll in the college and complete them if all other requirements for admission are satisfied, however, such courses will not reduce the number of credits required in the Upper Division for a degree.)
3. Satisfactory record: An applicant must have an overall average of "C" or higher as computed by the University of Florida on all work attempted at each institution previously attended. Regardless of average, courses completed at other institutions must reasonably parallel the curriculum at the University of Florida.
4. Good standing: An applicant must be in good standing and eligible to return to any institution previously attended.
5. Satisfactory conduct record: Regardless of other qualifications, an applicant who has experienced serious or continuing difficulty with school or other authorities may find his application disapproved.

APPLICATION PROCEDURES

The following information will serve as a guide in expediting entry into the College of Medicine Physician's Assistant Program in compliance with the above requirements.

1. Admission the the Physician's Assistant major is open in the Fall Quarter only.
2. Applicants who have not been previously enrolled at the University of Florida must have the completed application for admission form and application fee, official transcripts from each institution attended, and official test scores on file in the Admissions Office, 135 Tigert Hall, by February 1 of the year they wish to enter the program.
3. Applicants who have previously been enrolled at the University of Florida should direct their inquiries to Readmissions Section, Office of the Registrar, University of Florida.
4. A student information form packet must be obtained from the Physician's Assistant Program office in the College of Medicine. This form must be completed and returned to the Physician's Assistant Program, College of Medicine, Box J-222 MSB-JHMC, University of Florida, Gainesville, Florida, 32610 by February 1.
5. When the required credentials have been received by the Admissions Office a referral form will be prepared and forwarded along with copies of all credentials to the College of Medicine for review by the admissions committee of the Physician's Assistant Program.
6. Upon receipt of the referral form from the Admissions Office, applicants will be notified by the College of Medicine as to the status of their application. Qualified applicants will be invited for personal interviews. Priority in selection for admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success as a physician's assistant.

PRE-PHYSICIAN'S ASSISTANT CURRICULUM

The following courses must be completed prior to the Physician's Assistant major. These courses or acceptable equivalents may be incorporated in the general education requirements of a community college or lower division program.

GENERAL EDUCATION REQUIREMENTS:

	Credits
English	9
Math (college algebra)	4
Behavioral studies	4
Social Science	9
Humanities	12
*Physical Sciences	6-9
*Biological Sciences	6-9
Physical Education	3
*Three credits of either of these courses may be omitted.	
Sub-Total	56
**Electives	40
Total	96

**The remainder of the college work should be distributed throughout the humanities and social, biological, and behavioral sciences. The courses may aim toward a thorough study of a single area with a general background in many areas, or may group in several related areas in the sciences or humanities.

PREPROFESSIONAL REQUIREMENTS:

General Chemistry	4
Algebra	5
Biology (content emphasis recommended in molecular biology)	5

NOTE: These courses may be used to satisfy general education requirements. Additional chemistry courses beyond the minimum will enhance the chances for an applicant's acceptance.

CURRICULUM

FIRST PROFESSIONAL YEAR

Quarter I	*Credits*
MED 342 Community Health	3
MED 343 Behavioral Dynamics	3
MED 320 Physiology	4
MED 372 Patient Evaluation	3
Total	13

Quarter II	*Credits*
MED 373 Patient Evaluation	3
MED 370 Pharmacology	2
MED 332 Anatomy	5
MED 345 Medical Science	5
Total	15

Quarter III	*Credits*
MED 374 Patient Evaluation	3
MED 341 Microbiology	3
MED 310 Clinical Procedures	4
MED 346 Primary Care	5
Total	15

SECOND PROFESSIONAL YEAR

Quarter IV-VII	*Credit*
Clinical	60
Total Credits:	
Lower Division	96
Upper Division	103
Grand Total	199

REQUIREMENTS FOR DEGREE

To be eligible for the degree, Bachelor of Science in Medicine, the student must:

1. Satisfactorily complete all courses required by the College, faculty and approved by the University.
2. Earn at least 199 credit hours, 96 of which must be earned before entering the College of Medicine Physician's Assistant Program.
3. Complete the work of the upper division with an overall 2.0 grade point average.
4. Earn a grade of "C" or better in each upper division course.

PROBATION, SUSPENSION, AND EXCLUSION FOR ACADEMIC REASONS

If a student receives a "D" or "E" in a required course, the student must withdraw from the program. If space is available, upon petition to the department faculty committee, the student may be permitted to repeat the course the next time it is offered. A course may be repeated only once.

CERTIFICATION

Upon satisfactory completion of the program the graduate will be awarded the degree of Bachelor of Science in Medicine and is then eligible for the National Certification Examination offered by the National Commission on Certification of Physician's Assistants.

HEALTH POLICIES

The College of Medicine requires evidence of sound physical and mental health for admission. The College also requires a student to have specified immunizations and health screening tests periodically. These requirements are subject to change depending upon current knowledge and practice relating to health care. An annual health examination is recommended.

Each student registered in the Physician's Assistant Program is expected to have adequate hospitalization insurance. Students eligible for the health insurance plan sponsored by the student government may purchase it at the time of registration.

EXPENDITURES

The student is referred to the section in the University of Florida catalog for information about EXPENSES and also to the program information sheet.

Some physician's assistant courses require experiences away from the campus. For such courses, the student will need to provide for transportation and housing.

OFFICE OF STUDENT FINANCIAL AID

Information relating to sources of financial aid, as well as information relating to student employment may be obtained from the Office of Student Financial Aid.

Additional information relating to financial aid may be obtained from the office of the Physician's Assistant Program.

For further information write:

Physician's Assistant Program
Box J-222 MSB
College of Medicine
University of Florida
Gainesville, Fla. 32610

Child Psychology

College of Nursing

GENERAL STATEMENT

The purposes of the College of Nursing are to conduct undergraduate and graduate degree programs in nursing; to conduct nursing internships and residency programs; to create the structure and climate that will promote colleague relationships with staff in the broad health field; to conduct nursing research; and to conduct continuing education programs in nursing.

The establishment of the College of Nursing within the frame-work of the J. Hillis Miller Health Center at the University of Florida offers a unique opportunity to provide collegiate and professional development for nursing in a university setting. The Shands Teaching Hospital of the J. Hillis Miller Health Center houses outpatient clinics, an ambulatory unit, a psychiatric unit, and hospital units for seriously ill patients. Other community facilities, such as public health agencies, community hospitals and outreach clinics are also used to prepare students for beginning professional nursing positions. The student has opportunities for supervised observation and practice in selected phases of health care.

The nursing profession applies scientific and humanistic processes to the solving of nursing problems of individuals, families, and communities. The efforts of nursing are directed toward the nurturing, comforting, strengthening, teaching, maintaining, environmental supervising, and motivating of clients.

The program of the College of Nursing is fully accredited by the National League for Nursing and is approved by the Florida State Board of Nursing.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Nursing encourage applications from qualified students from all cultural, racial, religious, and ethnic groups.

Preparation for professional practice requires a very careful selection of learning experiences and adequate supervision and guidance. Therefore, applicants are considered by the Admissions Committee as candidates for admission to the College within established numerical limits.

Listed below are the specific requirements for admission to this College. It should be understood however that minimum requirements are given and that admission to this College is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission.

To be eligible for admission to the College of Nursing, the Transfer student (including the University College student) must:

1. Satisfy the minimum requirements for admission to a specific College that are set forth in the ADMISSIONS Section of the University catalog.
2. Earn at least 96 quarter hours (including three (3) quarter hours in physical education) of acceptable College credit with an overall average of "C+" or higher on all college level work attempted.
3. Complete all lower division courses indicated in the pre-nursing curriculum for students planning to enter the College of Nursing.
4. Pass all required preprofessional courses at a "C" level or better.
5. Show evidence of sound physical and mental health.

The following information will serve as a guide in expediting entry into the College of Nursing in compliance with the above requirements.

Application for admission to the upper-division, College of Nursing, should be made as soon as the student has enrolled in the term in which he will complete the 96 quarter hours of university work.

Deadline for the receipt of applications by the College of Nursing is nine (9) weeks in advance of the beginning of each quarter. Applications received after the deadline will be processed on a space available basis.

Upon receipt of transcripts and application information required by the College of Nursing, all applicants will be individually screened. Qualified applicants will be invited for personal interviews. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the professional field of nursing.

PRE-NURSING CURRICULUM

GENERAL EDUCATION:

The following courses must be completed prior to admission to the professional nursing major. The courses or acceptable equivalent may be incorporated in the general education requirements of a community college or university college (See section on Nursing under University College.)

Courses	Qtr. Hr. Credits
English	6
Social Science	6
Anthropology or Sociology	4
Physical Science	6
Biological Science	8
Humanities	12
Behavioral Studies	8
Physical Education	2
Sub-total	52
***Pre-Professional:**	
Microbiology	5
**Human Nutrition	4
Developmental Psychology or Human Growth & Development	4
Human Anatomy and Physiology	8
Expository Writing	3
Statistics or Algebra	4
Chemistry	4
Sub-total	32
Electives	12
Total	96

*Preprofessional courses may not be met by CLEP.
**Human Nutrition may be taken by correspondence.

SPONSORSHIP

Students with a 3.0 ("B") average or above who have satisfied all requirements for admission to the University, but lack one or more of the prescribed prerequisites for the nursing program, but not exceeding (1) quarter of full time course work, may request sponsorship status by the College of Nursing to complete such courses at the University of Florida. Sponsored students will be classified 3NR; however, their continuation in this status is temporary. The Admissions Committee will specify the courses to be completed and the minimum grade point to be earned by the student during the term of the sponsorship. Applicants for sponsorship are required to go through the entire admission process.

REGISTERED NURSE STUDIES

Registered Nurses are eligible to apply for admission to the College of Nursing. They must complete all prerequisites but admission alternatives are available.

Registered Nurse applicants with a 3.0 (B) or above who have satisfied 80 quarter hours of the requirements for admission to the College may request provisional admission status by the College of Nursing to complete the remainder of the required prerequisite courses at the University of

Florida. Provisional admission students will be classified 3NR. Registered Nurse students may continue in provisional admission status provided one course per quarter is satisfactorily completed. Entry into clinical courses requires the completion of all prerequisites. A current Florida Registered Nurse license is required and priority is given to nurses in practice. The Office of Registered Nurse Studies will advise all registered nurse applicants regarding required coursework and placement.

Additional information regarding curriculum alternatives for Registered Nurses may be obtained from the Office of Registered Nurse Studies.

REQUIREMENTS FOR DEGREE

To be eligible for the degree Bachelor of Science in Nursing the student must:

1. Satisfactorily complete all courses required by the College faculty and approved by the University.
2. Earn at least 198 credit hours, 96 of which must be earned before entering the College of Nursing.
3. Complete the work of the upper division with an overall 2.0 grade point average or better.
4. Earn a grade of "C" or better in each nursing course. Students earning below a "C" in any nursing course will be required to retake the course or its equivalent. A nursing course may be repeated only once.

GRADUATION WITH HONORS

Graduation with Honors — To graduate with Honors, a student must have completed the work of the upper division and must have received a grade point average of 3.50 or higher for all upper division work.

Graduation with High Honors — To graduate with High Honors, a student must have received a grade point average of at least 3.75 in all upper division work.

RESIDENCE REQUIREMENT

The College of Nursing complies with the requirements for residency as stated in the section — *Student Regulations-Degrees and Graduation,* University of Florida catalog.

LICENSURE

Upon satisfactory completion of the program, the graduate will be awarded the degree of Bachelor of Science in Nursing and is then eligible for the Florida State Board of Nursing examination for state licensure as a Registered Professional Nurse.

HEALTH POLICIES

The College of Nursing requires evidence of sound physical and mental health for admission. The College also requires the student to have specified immunizations and health screening tests periodically. These requirements are subject to change depending upon current knowledge and practice relating to health care. An annual health examination is recommended.

Each student registered in clinical nursing courses is expected to have adequate hospitalization insurance. Students eligible for the health insurance plan sponsored by the Student Government may purchase it at the time of registration.

UNIFORM INFORMATION

In order to participate in the activities of the first clinical course, all nursing students will be required to have a name pin, white uniform, College of Nursing Emblem for uniform, white nursing shoes, bandage scissors, a watch with a second hand, a stethoscope, and a pen light. More detailed uniform information is sent upon admission.

EXPENDITURES

The student is referred to the section in the University of Florida catalog for information about expenses.

Other expenditures include the items listed under Uniform information. Some nursing courses require experience away from campus. For such courses, the student will need to provide transportation.

CURRICULUM

The Nursing program is four years in length. During the first two years at another institution or University College, instruction is centered around the comprehensive courses to give the student a full, rich background for citizenship and a professional career.

The Nursing major involves professional experience in a variety of clinical settings for in-patient and out-patient care of individuals. These experiences include community health agencies, hospitals, primary service institutions and homes. Nursing courses involve extensive classroom activities correlated with supervised observation and practice in the understanding, prevention, maintenance, and curative processes of health care.

FIRST QUARTER

Course	Credits
NUU 3160C Dynamics of Human Behavior I	4
NUU 3210C Nursing Process I	6
Total	10

SECOND QUARTER

Course	Credits
NUU 3161C Dynamics of Human Behavior II	5
NUU 3220C Nursing Process II	8
NUU 3431 Professional Socialization	2
Total	15

THIRD QUARTER

Course	Credits
NUU 3162C Dynamics of Human Behavior III	5
NUU 3221C Nursing Process III	8
Total	13

FOURTH QUARTER

Course	Credits
NUU 4500C Health Problems I	5
NUU 4225C Nursing Process IV	8
Total	13

FIFTH QUARTER

Course	Credits
NUU 4501C Health Problems II	5
NUU 4226C Nursing Process V	8
Total	13

SIXTH QUARTER

Course	Credits
NUU 4502C Health Problems III	5
NUU 4227C Nursing Process VI	8
NUU 4432 Professional Socialization	3
Total	16

SEVENTH QUARTER

Course	Credits
NUR 4943 Nursing Process VII	10
	Total 10
Total Professional Nursing	Total 90
Additional Electives	12
Total Curriculum Requirements	102

TOTAL CREDITS

General Education	64
Preprofessional Education	32
Professional Nursing Requirements	102
Grand Total Credits	198

Elective Nursing courses are available to all students. (See Course Description section).

HONORARY ORGANIZATIONS SIGMA THETA TAU, INC.

Sigma Theta Tau, Inc. is the only National Honor Society of Nursing in the United States. Constituent chapters, such as Alpha Theta Chapter at the University of Florida, are established in collegiate schools of nursing accredited by the National League for Nursing, Sigma Theta Tau, Inc. is professional rather than social, and its purposes are: to recognize the development of leadership qualities; to foster high professional standards; to encourage creative work; and to strengthen commitment on the part of individuals to the profession of nursing. Members are chosen for this organization primarily on the basis of scholastic average and leadership ability.

COLLEGE OF NURSING STUDENT COUNCIL

The Nursing Student Council works cooperatively with the faculty and student of the College of Nursing on matters which involve the nursing faculty and student body. The council functions are: (1) to serve as a two-way channel of communication between faculty and students; (2) to act as a review committee to appoint student representatives to the faculty-student committees; (3) to serve as a fact-finding body for matters of concern relating to the students of the College of Nursing; and (4) to organize and promote College of Nursing social functions. Council representatives are elected from each rotation every September.

STUDENT NURSES' ASSOCIATION OF FLORIDA (SNAF)

The Student Nurses' Association of Florida (SNAF) is a preprofessional organization designed to orient the nursing student to eventual membership and participation in the professional organization, the American Nurses' Association.

Some of the projects undertaken by SNAF include: (1) resource assistance for state board examinations; (2) participation in community and charitable projects; (3) recruitment and orientation of prospective nursing students to this program; (4) participation in various interests in the College of Nursing affecting the student body as a whole; and (5) gathering information regarding pending legislation affecting the nursing profession.

SNAF is organized and implemented by nursing students, and its success depends entirely on active participation and membership of all nursing students.

STUDENT FINANCIAL AID

Information relating to sources of financial aid, as well as information relating to student employment may be obtained from the Office of Student Financial Aid.

Additional information relating to financial aid may be obtained from the office of the Dean of the College of Nursing.

GRADUATE STUDIES

The College of Nursing offers the Master of Nursing (nonthesis) and the Master of Science in Nursing (thesis) degrees. Areas of specialization include Women-Infant Health Care, Child Health Nursing, Family Health Nursing, Adult Health Care, and the functional areas of teaching, administration, clinical specialization, and research.

Consult the Graduate School catalog.

PHARMACEUTICAL CHEMISTRY
PHARMACY

College of Pharmacy

BACHELOR OF SCIENCE IN PHARMACY

GENERAL STATEMENT

The Profession of Pharmacy has expanded and become more oriented toward several fields of specialization in the past decade. Such areas as product development, drug design and *in vitro* and *in vivo* transformation of drugs are of greater importance today than ever before. Changes in the delivery of health care will have a pronounced influence on Pharmacy, as well as the entire health field and will require pharmacy graduates of varying backgrounds of specialization.

The College of Pharmacy offers a curriculum leading to the degree of Bachelor of Science in Pharmacy. In addition, the degree Doctor of Pharmacy (Pharm.D.) is offered. See page 000. M.S. and Ph.D. degrees are offered in Pharmaceutical Sciences through the Graduate School. See Graduate School Catalog.

The present baccalaureate curriculum of 141 quarter hours is designed to provide a variety of career opportunities to the pharmacy graduate. It is arranged to prepare the graduate for excellence in a field of desired emphasis or specialization. All students are required to complete a basic core of courses and an additional number of electives comprising cultural and professional subjects.

The curriculum provides instruction in subjects which are essential for the successful practice of the profession in community, hospital, and institutional pharmacies. Men and women graduates are in demand as sales representatives for wholesale and manufacturing pharmaceutical firms. They are eligible for a limited number of commissions in the U.S. Public Health Service and the Armed Forces. The courses provide a strong basis for additional study in preparation for research or analytical work in the pharmaceutical, chemical, biological, and cosmetic industries as well as inspection of food and drugs.

The College of Pharmacy, a unit in the J. Hillis Miller Health Center, meets the highest requirements of pharmaceutical instruction in this country. The College is accredited by the American Council on Pharmaceutical Education and therefore receives recognition for its courses from state boards requiring graduation from an accredited college of pharmacy as a prerequisite for examination and registration. The College is a member of the American Association of Colleges of Pharmacy and complies with its educational requirements.

The equipment includes pharmaceutical machinery for manufacturing dosage forms on a pilot-plant scale and modern facilities for undergraduate and graduate work in pharmacy and pharmaceutical chemistry.

A ten-acre tract is used by the College of Pharmacy for a medicinal plant garden. This teaching adjunct is a source of supply of fresh material for study, investigation, and classroom illustration.

Students in the University College who plan to major in pharmacy are urged to contact the Office for Student Affairs of the College of Pharmacy for assignment to counselors in the College and to confer with them regularly. Literature describing the opportunities in Pharmacy may be secured in the Office for Student Affairs.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Pharmacy encourage applications from qualified students from all cultural, racial, religious and ethnic groups. Listed below are the specific requirements for admission to this College. Admission to this College is a selective process; therefore, meeting the minimum requirements for admission does not automatically guarantee acceptance. The dean and faculty of the College of Pharmacy are aware of the need to graduate an increasing number of qualified pharmacists. However, due to limitations of staff and facilities, the College has had to establish quotas for the admission of new students. Through the Admissions Committee, the College of Pharmacy selects eligible applicants on an annual basis within its established quota. The quota is currently set at 125 new students each year.

March 1 of the year the student wishes to enter is the deadline for submitting the completed application to the University Registrar. Because of the large number of applications, the College of Pharmacy reserves the right to refuse consideration of any application for admission received by the Registrar after the deadline. All applications received by this date will be reviewed and given careful consideration.

The Admissions Committee of the Office for Student Affairs will consider such factors as educational objectives, adequacy of prerequisites, student performance and academic record, completion of the recommended prepharmacy program in the normal period of time, motivation for scholarly achievement and a career in the profession, test data, interview evaluation, and the student's personal record.

Students demonstrating evidence of academic excellence, a strong motivation for a career in the pharmacy profession and an acceptable interview evaluation will be given priority for admission and will be notified of their acceptance. Applicants whose qualifications clearly indicate that they will not be selected within the quota will be notified at the earliest possible date.

Since only one sequence of the required professional courses is offered each year, admission of new students to the College of Pharmacy is limited to the fall quarter. An applicant who is not selected under the established quota should notify the University Registrar, Admissions Section, in writing if he wishes to be considered for admission for the following academic year.

All applicants are required to take the Pharmacy College Admission Test (PCAT). Request for information and application form to take the PCAT should be directed to: Pharmacy College Admission Test, The Psychological Corporation, 304 East 45th Street, New York, New York, 10017. Examinations are held on a Saturday three times a year, usually the second week in November, February, and May. For applicants residing in Florida, the test may be taken in Gainesville, Miami, Tallahassee, or Tampa. Students taking the PCAT should request that scores be sent to Dr. Charles H. Becker, Assistant Dean, Office for Student Affairs, College of Pharmacy, University of Florida, Gainesville, Florida 32610.

Although the PCAT is given three times a year, it is important that students take the November testing if application for admission is being made for the following fall quarter. Notification to take the test must be submitted to The Psychological Corporation by October. PCAT scores must be sent to the College of Pharmacy as soon as possible to prevent delays, since interviews of applicants start in December or earlier.

Applicants having a Bachelor of Pharmacy or Bachelor of Science in Pharmacy degree received in a foreign country, seeking admission to obtain the B.S. degree in Pharmacy as a post-baccalaureate student for purpose of state board of pharmacy examinations are required to take the PCAT. However, the scores will not be used as a criterion for admission. Applicants whose degree was obtained in a non-English speaking country must submit satisfactory scores on the TOEFL (Test of English as a Foreign Language). The completed application together with PCAT and TOEFL scores must be submitted to the Office of the Registrar by August 1.

University College Students: To be eligible for admission to the College of Pharmacy the applicant must have: (1) earned at least 96 quarter hours of acceptable college credit with an overall average of "C" or higher on all college level work attempted; (2) completed all lower division courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the

University College section of this catalog; and (3) passed all required preprofessional courses within the lower division curriculum.

Transfer Students: To be eligible for admission to the College of Pharmacy, a transfer student must satisfy the minimum requirements for admission to an Upper Division College that are set forth in the ADMISSIONS Section of this catalog. Additionally, the applicant must satisfy the following specific requirements for admission to the College of Pharmacy: (1) The applicant must have completed the courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the University College section of this catalog or their equivalent; and (2) passed all required preprofessional courses with a minimum grade of "C". The following conditions will serve as a guide in expediting transfer to the College of Pharmacy in compliance with the above requirements.

A. Students attending four-year colleges, who wish to transfer after two years, should follow a program of general education and preprofessional courses similar to the Basic Curriculum for the Freshman and Sophomore Years for students planning to enter the College of Pharmacy as outlined in the University College section of this catalog.

B. Junior College Students Should:

1. Complete the two-year college parallel program at the junior college.
2. Satisfy the general education requirements established for the junior college.
3. Complete the following prerequisites:
   a. A one-year program in general chemistry
   b. A one-year program in organic chemistry
   c. A one-year program in physics
   d. One-year program in the biological sciences
   e. A mathematics program through the first course in calculus

RESIDENCE REQUIREMENT

In keeping with the requirements for accreditation, all students expecting to earn the degree of B.S. in Pharmacy must be enrolled in one or more pharmacy courses for a minimum of nine quarters. This regulation applies regardless of the number of studies completed in other fields.

REQUIREMENTS FOR GRADUATION

The Degree of Bachelor of Science in Pharmacy is awarded on completion of the curriculum as outlined. In order to graduate, (a) a student must have at least an overall 2.00 grade point average for all courses taken while enrolled in the College of Pharmacy, and (b) he must also have a minimum 2.00 point average in all required basic courses in the pharmacy curriculum exclusive of electives.

GRADUATION WITH HONORS

To be considered for graduation with Honors, a student must not have less than a 3.2 point average in all courses completed in the College of Pharmacy.

To graduate With High Honors, a student must meet the requirements for graduation With Honors and be recommended for graduation With High Honors by the faculty. No more than five percent of the graduating class will be considered for High Honors.

CURRICULUM

To be eligible for the degree of Bachelor of Science in Pharmacy all requirements of the curricula for pharmacy students in both the University College and the College of Pharmacy must be completed. The professional sequence of courses is on an annual basis beginning only in September each year. Students transferring to Pharmacy should contact the Office for Student Affairs, College of Pharmacy, J. Hillis Miller Health Center. All entering students will be required to complete the basic courses listed below.

The remaining credits will comprise a balance of cultural and professional elective courses approved by the student's faculty adviser. Areas of specialization such as General Practice, Industrial Pharmacy and Research Pharmacy are available.

The curriculum for the three professional years is as follows:

PROFESSIONAL CURRICULUM

FIRST PROFESSIONAL YEAR

First Quarter	*Credits*
PHA 3050 Introduction to Pharmacy	2
PHA 3110 Pharmaceutics 1	5
PHA 3500 Anatomy-Physiology	5
*Electives	5
Total	17
Second Quarter	
PHA 3111 Pharmaceutics 2	5
PHA 3501 Anatomy-Physiology	5
PHA 3630 Practicum Clerkship	5
or	
*Electives	5
Total	15
Third Quarter	
PHA 3112 Pharmaceutics 3	5
MCB 3013-13L Microbiology	5
PHA 3630 Practicum Clerkship	5
or	
*Electives	5
Total	15

SECOND PROFESSIONAL YEAR

First Quarter	*Credits*
PHA 4435 Pharmaceutical Chemistry 1	5
PHA 4411 Analytical Pharmaceutical Chemistry	4
BCH 4313 Biochemistry	5
PHA 4631 Practicum Clerkship	3
or	
*Electives	3
Total	17
Second Quarter	
PHA 4436 Pharmaceutical Chemistry 2	5
PHA 4120 Pharmaceutics 4	4
BCH 4203 Biochemistry	5
PHA 4412 Analytical Pharmaceutical Chemistry	2
or	
PHA 4631 Practicum Clerkship	3
Total	16 or 17
Third Quarter	
PHA 4437 Pharmaceutical Chemistry 3	5
PHA 4516 Physiology-Pharmacology 1	5
PHA 4350 Natural Products	4
PHA 4412 Analytical Pharmaceutical Chemistry	2
or	
*Electives	3
Total	16 or 17

THIRD PROFESSIONAL YEAR

First Quarter	*Credits*
PHA 4232 Pharmacy Law	5
PHA 4517 Physiology-Pharmacology 2	5
PHA 4602 Therapeutics	4
PHA 4632 Practicum Clerkship	3
Total	17
Second Quarter	
PHA 4750 Public Health, and Communicable Diseases	4
PHA 4518 Physiology-Pharmacology 3	5
PHA 4103 Professional Practice	4
Electives	5
Total	17
Third Quarter	
PHA 4632 Practicum Clerkship	3

Electives	8
Total	11
Total hours	141

*Cultural or Professional Electives

AREAS OF SPECIALIZATION

General Practice

The following elective courses in pharmacy and pharmaceutical chemistry are recommended for those students planning a career in community or hospital pharmacy.

	Credits
PHA 4140 Manufacturing Pharmacy	4
PHA 4720 Pharmacy and Society	3
PHA 4821 Clinical Radiopharmacy	4
††PHA 4740 The Pharmacist and Dynamics of Patient Care	3
††PHA 4735 Drugs and Society	3
††PHA 4930 Pharmacy Seminar	2
PHA 4202 Pharmacy Administration 1	4
PHA 4211 Pharmacy Administration 2	5
PHA 4150 Hospital Pharmacy	3
PHA 4506 Body Fluids and Electrolytes	4
PHA 4760 Dermatological Drug Products and Their Uses	3
PHA 4660 Clinical Psychiatric Pharmacy	4
††PHA 4908 Problems in Pharmacy	3
PHA 4106 Injection Dosage Forms and Other Sterile Products	5
PHA 4769 Non-Prescription Products	3
PHA 5508 Principles of Endocrinology	5
PHA 5762 Dermatological Protectives	5
PHA 6107 Parenterals	5
PHA 4765 Veterinary Pharmaceutical Products	3
PHA 4438 Pharmaceutical Specialties	4
PHA 4439 Pharmaceutical Specialties	4
††PHA 4909 Problems in Pharmaceutical Chemistry	3

The courses shown below are recommended for the designated areas of specialization. The student should see his adviser for a planned program.

Industrial Pharmacy

PHA 4140 Manufacturing Pharmacy	4
ESI 3305 Industrial Systems Engineering	2
ESI 4312 Operations Research 1	3
ESI 4313 Operations Research 2	3
CHM 3400 Physical Chemistry	4
CHM 3401-3401L Physical Chemistry	4
STA 3023 Statistics or Equivalent	4

Research Pharmacy

MAC 3312-3313-3314 Calculus	15
CHM 3400-3401-3401L Physical Chemistry	8
or	
CHM 4410-4411-4412-4411L-4412L Physical Chemistry	12
††PHA 4908, PHA 4909, PHA 4904 Undergraduate Research Problems	3
STA 3023 Statistics or Equivalent	4

††Grading is on a S-U basis only.

GRADUATE DEGREES

The College has two recognized departments within its Pharmaceutical Sciences Program, namely, the Department of Pharmacy and the Department of Pharmaceutical Chemistry, and offers graduate education leading to both the Master of Science in Pharmacy and Doctor of Philosophy degrees in each major. Students interested in pursuing graduate degrees in Pharmaceutical Sciences need not necessarily have a B.S. degree in Pharmacy. Baccalaureates with majors in chemistry, biology, and allied sciences are invited to apply.

A number of specialized areas within the two departments are offered. As examples, the student may pursue graduate work in any one of the following fields of concentrated emphasis: (1) pharmaceutics and/or bio-pharmaceutics; (2) pharmaceutical engineering and/or industrial pharmacy; (3) pharmaceutical product development; (4) synthetic medicinal drugs; (5) natural products - isolation, identification, synthesis, and medicinal uses; (6) drug metabolism, drug toxicology, and analysis; (7) analytic pharmaceutical chemistry; (8) pharmaceutical biology; (9) pharmacy health care; (10) pharmaceutical marketing; and (11) hospital pharmacy administration.

For additional information on graduate degrees in Pharmaceutical Sciences, see the Graduate School Catalog and consult with the Graduate Studies Coordinator for Pharmaceutical Sciences, College of Pharmacy, Room P-111, J. Hillis Miller Health Center.

DOCTOR OF PHARMACY

All professions involved in today's health care system are experiencing radical changes in their methods of providing service and in the philosophy accompanying their professional activities. Pharmacy is no exception. The advances being made in pharmaceutical sciences, the voluminous quantities of new literature concerning drugs, and an increasing awareness of adverse drug reactions, drug interactions, and iatrogenic diseases resulting from drug therapy have created a demand for an individual who possesses a high degree of expertise in the area of drug therapy.

The goal of the University of Florida's program is to develop drug therapy practitioners who will have the knowledge, clinical experience, and communicative skills necessary to respond to these needs and demands of the evolving health care system.

REQUIREMENTS FOR ADMISSION

The Doctor of Pharmacy Program is a two year post-baccalaureate program offered by the College of Pharmacy. Applications are encouraged from qualified individuals from all cultural, racial, religious, and ethnic groups. Applicants will be considered who have completed four years of the five year pharmacy curriculum, or who have been awarded a Bachelor of Science in Pharmacy degree from a college of pharmacy accredited by the American Council on Pharmaceutical Education. Admission to the Doctor of Pharmacy program is a selective process; thus, meeting the minimum requirements for admission does not automatically guarantee acceptance. Due to limitations of faculty and facilities, a quota for admission of new students was established. The quota is currently set at eight new students annually.

Applications must be submitted to the Office of the Registrar, Graduate Admissions Section, University of Florida by February 1st of the year the student plans to enter the June entering class. This office will provide a copy of the completed application to the Office of the Pharm.D. in the College of Pharmacy. All applications received by this date will be carefully reviewed by the Selection Committee.

Letters of recommendation, a curriculum vitae, and a statement of professional goals must be submitted together with the completed application. An interview is required of those applicants meeting the minimum standards of the Selection Committee. The following criteria are used in considering applicants for admission: academic record, letters of recommendation, experience, motivation, and personal interview. Individuals with a strong academic background, a record of active involvement in pharmacy, definite professional goals, and motivation for patient care will be given priority for admission.

Since only one sequence of courses is offered annually, admission of new students is limited to the summer quarter which starts in June. Denied students wishing to re-apply for the following year should notify the Office of Pharm.D., and in addition, request a supplemental application form by writing to the Office of the Registrar, Graduate Admissions. There is no charge for re-applying.

CURRICULUM

The Doctor of Pharmacy program consists of two years of study. The first year is devoted to didactic course work in which the student is required to take 26 cr. hours of required subjects and 22 cr. hours electives. The electives provide the student with an opportunity to pursue his area of special interest. Numerous electives are available through the Colleges of Pharmacy, Medicine, Nursing, and Health Related Professions.

The second year comprises various fields of clinical experience. This phase of the Pharm.D. program provides clinical clerkship over 4 quarters or one calendar year. The clinical experiences are arranged on a rotating basis whereby the student participates in various patient care areas, such as: internal medicine, pediatrics, psychiatry, drug information, and chronic care/ambulatory patient care. In addition, the student is permitted to select several rotations in patient care areas. The student is supervised by a faculty member in all of the rotational clinical experiences. During these experiences, the student participates and cooperates with physicians and other health professionals.

As partial fulfillment of the requirements for the Pharm.D. degree, the student must complete an individual research project by the end of his clinical clerkship. The project must be original, creative and innovative in some area of clinical patient care. The research study must be presented to the student's supervisory committee for approval and must be written in a format suitable for publication.

Further details, information and applications can be obtained by writing to the Director, Doctor of Pharmacy Program, College of Pharmacy, Health Center, University of Florida, Gainesville, Florida 32610.

College of Physical Education, Health and Recreation

PROFESSIONAL PHYSICAL EDUCATION
HEALTH EDUCATION AND SAFETY
RECREATION
GENERAL PHYSICAL EDUCATION

College of Physical Education, Health, and Recreation

GENERAL STATEMENT

The College of Physical Education, Health, and Recreation offers undergraduates and graduate degree curricula as well as other programs of instruction and services through its four departments, namely: Professional Physical Education, Health Education and Safety, Recreation, and General Physical Education.

The requirements of the undergraduate degree curricula are organized on the basis of the Lower Division and the Upper division. Basic requirements of each curriculum available to students in the Lower Division are listed in the University College section of this catalog.

UNDERGRADUATE DEGREES

Courses of study leading to three undergraduate degrees are offered: Bachelor of Science in Physical Education, Bachelor of Science in Health Education, and Bachelor of Science in Recreation.

A student is required to complete (1) one of the curricula offered in this College; (2) all Upper Division courses with a minimum grade point average of 2.0; (3) 196 quarter hours for the four-year period with an average of 2.0 or higher; and (4) the course requirements in his major field with an average of 2.0 or higher.

In addition to completing the above requirements the student is expected to participate in extracurricular activities. Experience shows that men and women are called on to perform many and varied services in their respective schools and communities. Participation in extracurricular activities while in college contributes substantially to the success of persons entering the profession. Information concerning this expectation may be secured from the student's adviser.

REQUIREMENTS FOR ADMISSION

The University of Florida and the College of Physical Education, Health, and Recreation encourage applications from qualified students from all cultural, racial, religious, and ethnic groups. Listed below are the specific requirements for admission to this college. It should be understood, however, that minimum requirements are given and that admission to this college is a selective process. The satisfaction of minimum requirements does not automatically guarantee admission. A student's total record including educational objectives, pattern of courses previously completed, quality of previous academic record, and test data will all be considered in evaluating an application for admission. Priority in admission will be given to those applicants whose potential on the basis of their total record indicates the greatest likelihood of success in the program requested.

University College Students: To be eligible for admission to the College of Physical Education, Health, and Recreation, a University College student must have: (1) earned at least 96 quarter hours of acceptable college credit with an overall average of "C" or higher on all college level work attempted; (2) completed as many as possible of the lower division courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the University College section of this catalog.

Transfer Students: To be eligible for admission to the College of Physical Education, Health, and Recreation, a transfer student must satisfy the minimum requirements for admission to an Upper Division College that are set forth in the ADMISSIONS Section of this catalog. Additionally, the applicant must satisfy the following specific requirements for admission to the College of Physical Education, Health, and Recreation. The applicant should have completed the courses required for the desired curriculum as indicated in the program for the Freshman and Sophomore years in the University College section of this catalog or their equivalent. The following conditions will serve as a guide in expediting transfer to the College of Physical Education, Health, and Recreation in compliance with the above requirements.

A. Students attending four year colleges, who wish to transfer after two years, should follow a program of general education and preprofessional courses similar to the Basic Curriculum for the Freshman and Sophomore Years for students planning to enter the College of Physical Education, Health, and Recreation.

B. Community College students should:

1. Complete the two-year college parallel program at the community college. This should include completion of:
   a. general education requirements
   b. elective courses which provide introduction to the fields of physical education, health education or recreation
   c. a course in public speaking
   d. courses, if available, which deal with the development of basic skills and provide instruction in organizing and teaching these activities
   e. skill courses in tennis, golf, swimming, gymnastics if majoring in physical education; tennis, golf, swimming if majoring in recreation; a chemistry course if majoring in health education
2. Become actively involved in extracurricular activities in order to develop competencies and to gain experience in a wide variety of activities relating to the professional field of choice.
3. Consider becoming qualified to teach or work in a second field and select elective work in the area.
4. Take 3000 level courses in professional education and professional physical education, health, or recreation when enrolled at the University of Florida.

Provisional Admission: Within space limitations, students who do not meet precisely the admission requirements indicated in the appropriate section above may be granted provisional admission to the College of Physical Education, Health, and Recreation by the Committee on Admissions. The conditions of provisional admission will include specific courses to be completed and minimum grade points to be earned. Provisional status will be removed and the student fully admitted to the College of Physical Education, Health, and Recreation provided the conditions set forth in the provisional admission are fulfilled. Failure to satisfy the conditions of the provisional admission will result in denial of subsequent enrollment in the college.

COUNSELING OF STUDENTS

The College of Physical Education, Health, and Recreation maintains an undergraduate and graduate counseling office. Cumulative records are kept in the office so that any student may receive advice on such matters as (1) selection of courses, (2) participation in extracurricula activities, (3) scholastic problems, and (4) developing desirable qualities of leadership and personality. All students planning to pursue any of the curricula offered by the College of Physical Education, Health, and Recreation should avail themselves of this counseling service. Information about the counseling office can be obtained in Room 214, Florida Gymnasium.

Students are responsible for familiarizing themselves with all information concerning the appropriate degree program.

ADMISSION TO ADVANCED PROFESSIONAL SEQUENCE

Students majoring in Physical Education or Health Education are required to take specified courses in the

College of Education. The catalog description of programs in the College of Education should be consulted for prerequisites for admission to the advanced professional course sequence in that college. Clearance for permission to register in these courses is administered by the undergraduate academic counselors in Physical Education and Health Education.

TEACHERS' CERTIFICATES

Certification to teach in the schools of Florida is granted by the State Department of Education under regulations established by the State Board of Education. These regulations are fully described in a bulletin issued by the State Department of Education. A copy of this bulletin is available to any student in the office of his adviser. The student is expected to familiarize himself with these requirements.

STUDENT TEACHING AND INTERNSHIP PROGRAM

Students enrolled in Physical Education, Health Education, and Recreation curricula offered in this College are required to register for the appropriate student teaching or internship program for one term during their Senior year. They will be expected to live in the community in which they serve their internship or student teaching.

RESEARCH

In order to better carry out its role in research, the College of Physical Education, Health, and Recreation conducts, coordinates, and encourages research through a research committee. This committee is ordinarily composed of faculty members actively engaged in research activities. The facilities of the research laboratory are available to faculty members as well as to graduate and undergraduate students in the College. Further information may be obtained from the Chairman, Research Committee.

GENERAL REGULATIONS

University Student Regulations: The STUDENT REGULATIONS section of this catalog contains information of essential importance to all students. The regulations cover such points as (1) degree and graduation regulations; (2) maximum and minimum loads; (3) grades and averages; (4) probation, suspension and exclusion for academic reasons; (5) withdrawals; (6) absences or unsatisfactory work; (7) classification of students; and (8) petitions and appeals.

Student Responsibility: The student must assume full responsibility for registering for the proper courses and for fulfilling all requirements for his degree. The faculty and the student's adviser will assist and counsel, but the student must take the initiative and assume responsibility for meeting all requirements.

The student's program of studies is subject to the approval of his adviser and the department chairman of the student's major field. A student majoring in Physical Education or Recreation who has skill deficiencies may be required to take courses to remove the deficiencies.

Each student is responsible for completing all courses for which he is registered. Courses may be dropped or changed without penalty only through the approval of the student's adviser.

Seniors must file formal application for degree in the Office of the Registrar no later than the deadline date published in the Calendar.

College Probation: Students who fall below a 2.0 average are placed on College Probation. If normal progress toward graduation is not accomplished, further registration in the Upper Division of this college may be denied.

Student Petitions: If a student believes that the College regulations work a peculiar hardship or injustice in his case, he may petition for waiver of the regulation involved. Information on the procedure to be followed in submitting such petitions may be secured from the student's adviser.

Uniforms: In order to participate in sports activities required in the professional program, all physical education major students will be required to purchase a prescribed uniform. Men's and women's uniforms have the emblem which designates the College of Physical Education, Health, and Recreation classification. Uniforms may be purchased from the campus bookstore. Uniform policies are subject to review and are approved by students and faculty before changes are made.

Expenditures: The student is referred to the section in this catalog under *Fees* for information about expenses. In addition, some courses require experience away from the campus. For such courses, the student will need to make provisions for transportation. One course PEO 2031 Recreational Sports, requires payment of a nominal fee for use of bowling facilities. Students must provide their uniforms, including swimming suits, for activity courses.

GRADUATION WITH HONORS AND HIGH HONORS

Determination of eligible candidates for Honors or High Honors is the responsibility of the College Undergraduate Committee. Eligibility is based on grade point average in the Upper Division, but also requires recommendation by the college faculty.

Graduation with Honors — To graduate with Honors, a student must have earned a grade point average of 3.4 or higher for all Upper Division courses.

Graduation with High Honors — To graduate with High Honors, a student must have earned a grade point average of 3.7 or higher for all Upper Division courses.

The student must have completed at least 96 quarter hours of credit work in residence at the University of Florida, including a minimum of 80 quarter hours of letter grade courses carrying Upper Division credit, exclusive of internship and student teaching. Credit earned through correspondence or extension courses shall not be included in computing honor point averages.

GRADUATE DEGREES

Courses are offered by this College in the Graduate School leading to the degree of Master of Physical Education, the degree of Master of Arts in Physical Education, the degree of Master of Health Education, and the degree of Master of Arts in Health Education. Admission and degree requirements for graduates of accredited institutions are described in the Graduate School catalog.

PROFESSIONAL PHYSICAL EDUCATION

CURRICULUM IN PROFESSIONAL PHYSICAL EDUCATION

Admission: Students majoring in any degree program in physical education must complete both the general education requirements for physical education majors specified in the University College section of this catalog and the Professional Physical Education CORE described below:

GENERAL EDUCATION REQUIREMENTS

	Credits
American Institutions (9-11 hrs.)	
POS 2112 American State and Local Government or POS 2041 American Federal Government	3-5
SSI American Institutions	6
Behavioral Studies (4 hrs.)	
PSY 2013 General Psychology or PCO 3714 Personal Growth	4

Biological Science (11 hrs.)
- APB 2153 The Biological Sciences - Cell and Organism Biology 3
- PET 3320 Applied Human Anatomy 4
- PET 3350 Applied Human Physiology 4

English (11 hrs.)
- ENC 1102 Expository Writing 3
- ENG 1200 Introduction to Fiction, ENG 1400 Introduction to Drama, or ENG 1710 Introduction to Poetry 8

Health Education (7 hrs.)
- HES 2000 Personal and Family Health 4
- HES 2400 First Aid and Personal Safety 3

Humanities (12 hrs.)
- HUM 2210 Western Humanities 4
- HUM 2230 Western Humanities 4
- HUM 2250 Western Humanities 4

Mathematics (4 hrs.)
- MGF 1113 Fundamental Mathematics 4

Physical Education (2 hrs.)
- PEM 1100 Basic Concepts 2

Physical Sciences (10-11 hrs.)
- ISC 2400 Fundamentals of Physical Science or PHY 2004 Applied Physics I or PHY 2050/2050L General Physics I/Lab 4-5
- ISC 2401 Fundamentals of Physical Science 3
- ISC 2402 Fundamentals of Physical Science 3

Speech (4-5 hrs.)
- SPC 3601 Public Speaking or SPC 2300 Introduction to Speech Communication 4-5

Total 74-78

GENERAL PROFESSIONAL PHYSICAL EDUCATION CORE

	Credits
PET 3011 Foundations of Physical Education	3
PET 3127 American Physical Education and Sport	3
PET 3340C Kinesiology of Motor Skills	3
PET 3360C Physiology of Exercise and Training	3
PET 3381C Theories of Skill Acquisition and Motor Development	3
PET 3590C Professional Seminar in Physical Education	1
PET 3640C Adapted Physical Education with Lab	3
PET 3940C Introductory Field Experiences in Physical Education I	1
PET 3944C Introductory Field Experiences in Physical Education II	1
PET 4510C Measurement and Evaluation with Lab	3
PET 4622C Prevention and Care of Athletic Injuries	3
Total	27

I. Degree Programs in Professional Physical Education (with Teacher Certification)

This program will lead to the Degree Bachelor of Science in Physical Education with teacher certification. The student may choose to utilize this program as a foundation for graduate study in the areas of administration, curriculum and instruction. To obtain this degree the student must complete the General Education Requirements. In addition the student must complete the General Professional Physical Education CORE, the Professional Physical Education Teaching CORE and the Professional Education CORE. The student must also select either the Elementary School or the Secondary School Specialization.

PROFESSIONAL PHYSICAL EDUCATION TEACHING CORE

	Credits
DAE 2320C Modern Dance	3
PEO 1011C Softball and Flag Football	2
PEO 1511C Soccer and Related Sports	2
PEO 1521C Volleyball and Team Handball	2
PEO 2032C Recreational Activities II	2
PEO 2341C Tennis	2
PEO 3621C Basketball	2
PEP 1301C Track and Field	2
PEP 2201C Gymnastics	3
PEQ 1121C Swimming	2
PET 4415 Administration of Physical Education	4
PET 4442C Physical Education in the Secondary School	5
Total	31

PROFESSIONAL EDUCATION CORE

	Credits
EDE 4203 The Elementary School Today	4
EDF 3110 Human Growth and Development	5
EDF 3604 Social Foundation of Education	5
ESE 4011 The Secondary School Today	5
ESE 4443 Student Teaching	16
Total	35

A. Elementary School Specialization

This curriculum is designed to prepare specialists in Elementary School Physical Education with certification for grades K-12. Courses required in this specialization are:

	Credits
DAE 3370 Rhythmic Activities for Elementary School Children	3
PEO 3041C Games and Sports for Elementary School Children	3
PEP 3203C Educational Gymnastics for Elementary School Children	3
PET 3430 Physical Education Program in the Elementary School	3
PET 4941C Field Experience in Elementary School Physical Education	3
Electives in Professional Physical Education	1
Total	16

B. Secondary School Specialization

This curriculum is designed to prepare specialists in Middle School and High School Physical Education with certification in grades K-12. Courses required in this specialization are:

DAE 2360C Folk and Social Dance	3
PEO 2031C Recreation Activities I	2
PEO 2121C Golf	2
*PEO 2561C Field Hockey, Weight Training and Conditioning	(3)
PEO 3213C Officiating III	1
PEO 3323C Officiating I	1
PEO 3623C Officiating II	1
*PEP 2401C Martial Arts, Weight Training and Conditioning	(3)
*PEP 2421C Wrestling, Weight Training and Conditioning	(3)
PET 3461C Physical Education in the Elementary School	3
Total	16

*Students are to select one of these three courses.

Recommended elective: DAA 3140C Dance Composition ..... 2 Credits

II. Degree Program in Professional Physical Education

These programs will lead to the Degree Bachelor of Science in Physical Education without teacher certification. To obtain this degree the student must complete the General Education Requirements. In addition students must complete the General Professional Physical Education CORE and the Professional Physical Education CORE. The student must also select either the Applied Physical Education Careers Program or the Scientific Graduate School Preparatory Program.

PROFESSIONAL PHYSICAL EDUCATION CORE

	Credits
DAE 2320C Modern Dance	3
PEO 1011C Softball and Flag Football	2
PEO 1511C Soccer and Related Sports	2
PEO 1521C Volleyball and Team Handball	2
PEO 2032C Recreational Activities II	2

PEO 2341C Tennis 2
PEO 3621C Basketball 2
PEP 1301C Track and Field 2
PEP 2201C Gymnastics 3
PEQ 1121C Swimming 2
PET 4415 Administration of Physical Education 4
PET 4948C Practicum in Physical Education 16
Electives in Professional Physical Education 9

Total 51

Alternatives to the CORE courses listed above must be approved by an academic advisor or the Department Chairperson.

A. Applied Physical Education Careers Program

This program is designed to prepare students as Physical Fitness Specialists, Athletic Trainers, Exercise Testing Technicians, Exceptional Child Physical Education Specialists and Pre-School and Post-School Physical Education Specialists. Students pursuing this track must fulfill the following requirements:

A minimum of 44 elective hours selected from courses offered at the University of Florida. These courses must be selected with the approval of a faculty advisor and the Chairperson of the Department. At least 24 of these hours must be directly related to the career program the student is pursuing.

B. Scientific Graduate School Preparatory Program

This program is designed to prepare students for study toward an advanced degree in the scientific foundations of Physical Education. Courses required in this specialization are:

	Credits
CHM 2040 Introductory General Chemistry	4
CHM 2041C General Chemistry	4
COP 3110 Introduction to Computer Programming	2
COP 3212 Computer Programming Using FORTRAN	2
ENV 3003 Environmental Quality and Man	4
*MAC 1131 Self-paced Algebra and Trigonometry	(3)
*MAC 1132 Algebra and Trigonometry	(5)
*MAT 1033 Basic Algebra	(2)
PHY 2050 General Physics	4
PHY 2050L Laboratory for Physics	1
PSY 2013 General Psychology	4
STA 3023 Introduction to Statistics I	4
Total	34

*Students must select MAT 1033 and MAC 1131 or MAC 1132 for a total of 5 hours of credit.

The student must select 14 elective hours from courses offered at the University of Florida with the approval of a faculty advisor. It is suggested that these courses be concentrated in a specific area. LIS 2001 (Use of Books and Libraries, 2 credits) is strongly recommended.

III. Non-Degree Concentrations

The Department of Professional Physical Education offers areas of concentration in Coaching and Dance. These concentrations are non-degree programs.

A. Coaching Concentration

This concentration is designed to prepare students from any discipline for full or part time careers in coaching or athletic administration. Consult an academic advisor or the Department Chairperson or prerequisites in selected courses. The student is required to complete the following courses:

	Credits
PEO 3213C Officiating III, or PEO 3323C Officiating I, or PEO 3623C Officiating II	1
PET 3212 Foundations and Principles of Coaching	3
PET 3340C Kinesiology of Motor Skills	3
PET 3360C Physiology of Exercise and Training	3
PET 3381C Theories of Skill Acquisition and Motor Development	3
PET 4416 Administration of Athletics	3
PET 4622C Prevention and Care of Athletic Injuries	3
PET 4949C Practicum in Coaching (may be repeated for a total of 6 hours)	2-6
*Elective in Coaching (see below)	4
Total	25-29

*Coaching Electives. The student must select 4 credits from the following:

PEO 3124C Coaching Golf 2
PEO 3214C Coaching Softball 2
PEO 3219C Coaching Baseball 2
PEO 3324C Coaching Volleyball 2
PEO 3344C Coaching Tennis 2
PEO 3514C Coaching Soccer 2
PEO 3624C Coaching Basketball 2
PEO 3644C Coaching Football 2
PEP 3204C Coaching Gymnastics 2
PEP 3304C Coaching Track and Field 2
PEP 3424C Coaching Wrestling 2
PEQ 3124C Coaching Swimming and Diving 2

B. Dance Concentration

The Department of Professional Physical Education offers an area of concentration in dance which is available to students majoring in any discipline. The student is required to complete 9-12 hours in courses related to technique and performance. A minimum of four quarters of dance technique at the appropriate level must be chosen from the following:

	Credits
*DAA 2101 Modern Dance II	2
*DAA 2200 Ballet I	2
*DAA 3102 Modern Dance III	3
*DAA 4103 Modern Dance IV	3

The student is expected to participate in the University of Florida Dance Company for at least one quarter and to perform in a minimum of one minor production. Credit for these may be obtained through registration in the following:

	Credits
DAA 3102 Modern Dance III, or DAA 4103 Modern Dance IV	3

In addition, the student is required to complete the following courses:

	Credits
DAE 2320 Modern Dance	3
DAA 3140 Dance Composition	2
*DAN 3500 Dance Production	1-3
DAN 4110 Seminar in Dance History and Philosophy	4
Total	23-25

*May be repeated.

Suggested courses: (6-8 hrs.)

	Credits
ARH 2050 Introduction to Principles and History of Art	3
DAE 2360 Folk and Social Dance	3
DAE 3370 Rhythmic Activities for Elementary School Children	3
MUL 2011 Introduction to Music	4
PET 3320 Applied Human Anatomy	4
PET 3350 Applied Human Physiology	4
PHI 3800 Aesthetics	5
PSY 2013 General Psychology	4
THE 2000 Theatre Appreciation	4

HEALTH EDUCATION AND SAFETY

CURRICULUM IN HEALTH EDUCATION

Leading to the Degree of Bachelor of Science in Health Education. This curriculum is designed to prepare students in a wide variety of health career opportunities: (1) to serve in public schools and colleges as teachers of health and related life sciences; and as coordinators of school health programs; (2) to serve as public health educators in official and voluntary health agencies; (3) to serve as health education specialists in a variety of existing and emerging positions with

governmental, municipal, industrial and commercial, and health care delivery organizations.

Opportunities are available for OSHA programs as well as other certificate programs. Departmental and interdisciplinary courses are available for emphasis in special areas such as: Population Control, Sex Education, Consumer Health, Drug Education, Death Education, Human Ecology, Mental Health.

Academic advisers of the Department are available to help the student plan courses and elective hours which may be used to pursue concentrations in one or more of the following:

Health Education and Health Sciences. Concentration in school health and the scientific bases of health, with teacher certification in health education and in selected health sciences.

School and Community Health Education. Concentration in both school health and community health, providing practice teaching and public health education internship to prepare the health educator to teach in schools or to work community agencies or organizations.

Community Health Education. Concentration in community health, designed to prepare the health educator to work in community organizations or agencies, in industrial settings, or in health care centers where programs are directed toward special target groups of the community.

Health Education and Environment Studies. Concentration in environmental health problems and issues, providing a wide range of departmental and interdisciplinary course work and field experiences to prepare the student for career opportunities in environmental investigations and protection.

Health and Patient Education. Concentration in health education for patients and their families in health care delivery settings. Course work and field experiences provide opportunities for the student to participate as a member of the health care team.

Health Education and Driver Education. Concentration in health education and driver and traffic safety education, with teacher certification in both areas. Designed to extend career opportunities in teaching positions, supervisory assignments, or in positions in industry and government.

Admission: Students who wish to register for the curriculum should complete the following courses:

FRESHMAN YEAR

	Credits
APB 2150 Biological Science	9
APB 2150L Lab Biological Science	1
PSC or ISC Physical Science	4
ENG English	9
HES 2000 Personal and Family Health	4
MGF or MAC	4
PEM 1100 Basic Concepts of Physical Education	2
SSI Social Sciences	6
Electives for concentration area(s)	9
Total	48

SOPHOMORE YEAR

	Credits
APB 2170 Microbiology	3
APB 2170L Discussion Laboratory in Microbiology	2
CHM Chemistry	4
GLY Geology	4
HES 2001 Community and Environmental Health	4
HES 2400 First Aid and Personal Safety	3
HUM The Humanities	12
PSY 2013 General Psychology	4
SOC 2000 Principles of Sociology	4
SPC Speech	4
Electives for concentration area(s)	4
Total	48

JUNIOR YEAR

	Credits
EDF 3110 Human Growth and Development	5
EDF 3604 Social Foundations of Education	5
HES 3144 Health Education and Medical Terminology	3
HES 3296 Field Experience in Community Health	3
HES 3301 Elementary School Health Program	4
HES 3431 School and Community Safety Education	3
PET 3320 Applied Human Anatomy	4
PET 3350 Applied Human Physiology	4
Electives for concentration area(s)	19
Total	50

SENIOR YEAR

	Credits
EDE 4203 The Elementary School Today	4
ESE 4011 The Secondary School Today	5
ESE 4943 Student Teaching	8-16
HES 4322 Health Education in the Secondary School	4
HES 4298 Community Health Education—Internship	6-16
HES 4510 Consumer Health	3
HES 4540 Drug Education	3
HES 4561 Sex Education	3
Electives for Concentration Area(s)	12
Total	50

Special Teacher Certification in Driver Education and Safety Education

The following courses are provided for those wishing to add Driver and Safety Education to their Florida Teaching Certificate:

HES 3431 School and Community Safety Education, 3 credits
HES 4450 Driver and Traffic Safety Education, 4 credits
HES 4451 Teaching Driver and Traffic Safety Education, 4 credits.

RECREATION

I. Curriculum with an emphasis in Public Recreation Leading to a Degree of Bachelor of Science in Recreation

This curriculum is designed to prepare students to become leaders or directors of community recreation, industrial recreation, summer camps, playgrounds, youth organizations, outdoor recreation, or Air Force, Navy and Army recreation activities.

Admission: In addition to general education requirements for recreation majors specified in the University College section of this catalog, students who wish to register for this curriculum should have completed as many as possible of the following courses while registered in the lower division.

Five activity hour requirements at least one from each of the following groupings:

a. Gymnastics, tumbling, modern dance, or body conditioning
b. Racket sports
c. Combatives
d. Individual sports — golf, archery, bowling or track
e. Team sports — volleyball, basketball, soccer, softball, or field hockey

FRESHMAN YEAR

	Credits
SSI American Institutions	9
ENC English Composition	9
LIS 2001 Use of Books and Library	2
POS 2112 American State & Local Government	3
SPC 3601 Public Speaking	4
PSC The Physical Sciences	6
Activity Requirement	3
PEQ 1121 Swimming	2
HES 2400 First Aid	3
PEM 1100 Physical Education	2
Electives	6
Total	49

SOPHOMORE YEAR

	Credits
Behavioral Studies	3
Behavioral Studies or Physical Science	3
HUM The Humanities	12
APB Biological Sciences	9
MGF Fundamental Mathematics	4
LEI 3507 Special Events-Administration and Programming	3
Activity Requirement	2
DAE 2360 Folk and Social Dance	3
PSY 2013 General Psychology	4
SOC 2000 Principles of Sociology	4
Total	47

JUNIOR YEAR

	Credits
EDF 3110 Human Growth and Development	5
LEI 3508 Sports Activities: Administration and Programming	3
LEI 3320 Leadership and Social Recreation	4
LEI 3260 Outdoor Recreation	3
LEI 3600 Planning and Maintenance of Leisure Facilities	3
LEI 3921 Field Experience in Recreation	4
LEI 3330 Camp Counseling	4
SOC 2020, 3001, or 3310	4
LEI 4880 Evaluation of Leisure Services	3
LEI 3540 Management of Recreation Centers	4
LEI 3400 Recreation Programs	4
LEI 3140 Philosophy and History of Recreation, Leisure and Play	3
Electives	6
Total	50

SENIOR YEAR

	Credits
LEI 4700 Recreation for Special Community Groups	5
LEI 4500 Administration of Recreation	5
ENC 3351 Business Communications	4
MUY 3601 Music	4
ART 3100 Crafts	4
ECO 2013 Basic Economics-1	5
Electives	7
LEI 4940 Internship	16
Total	50

II. Curriculum with an emphasis in Therapeutic Recreation Leading to a Degree of Bachelor of Science in Recreation.

This curriculum is designed to prepare students to become leaders or directors of hospital recreation, recreation for the aged, recreation for deviant persons, and for other exceptional groups.

Admission: To register for the Junior Year curriculum students must have completed the requirements as listed under University College for the freshman and sophomore year in this curriculum.

FRESHMAN YEAR

	Credits
SSI American Institutions	9
ENC English	9
PSC The Physical Sciences	6
PEQ 1121 Swimming	2
SPC 3601 Public Speaking	4
HES 2400 First Aid	3
PSY 2013	4
Electives	8
PEM 1100 Physical Education	2
Total	47

SOPHOMORE YEAR

	Credits
HUM The Humanities	12
APB Biological Sciences	9
MGF Fundamental Mathematics	4
BES 2132	5
DAE 2360 Folk & Social Dance	3
LEI 3330 Camp Counseling	4
HES 2000 Individual & Family Health	4
Electives	8
Total	49

JUNIOR YEAR

	Credits
LEI 3880 Evaluation in Leisure Services	3
LEI 4760 Leisure Recreation and the Older Adult	4
LEI 3320 Leadership and Social Recreation	4
LEI 3540 Management of Rec. Centers	3
LEI 3400 Recreation Programs	4
EDF 3110 Human Growth & Dev.	5
ART 3100 Crafts	4
LEI 3140 Philosophy and History of Recreation, Leisure and Play	3
LEI 3921 Field Experience in Recreation	4
PEI 3320 Applied Anatomy	5
PEI 3640 Adapted Physical Education	2
LEI 4700 Recreation for Special Community Groups	5
PPE 3004 Psychology of Personality	4
Total	50

SENIOR YEAR

	Credits
LEI 4770 Leisure Services for The Socially Deviant	5
LEI 4500 Administration of Recreation	5
MUY 3601 Music in the Field of Recreation	4
EAB 4704 Introduction to Applied Beh. Analysis	5
LEI 4880 Evaluation of Leisure Services	4
LEI 4711 Program Planning and Evaluation in Therapeutic Recreation	4
Electives	7
LEI 4940 Internship	16
Total	50

GENERAL PHYSICAL EDUCATION

THE UNIVERSITY REQUIREMENT

Students are required by the University to register and participate satisfactorily in Basic Concepts of Physical Education (PEM 1100). This program provides for a better understanding of physical health and its relation to total health. It is felt that through this course students will acquire knowledge and insights necessary for the development of a personal fitness program and competencies necessary for the wise selection of future recreation and leisure pursuits. Students should take the course during their first quarter of attendance at the University of Florida in the lower division, and it may be taken with an S/U option.

The Adapted Program

Students with physical limitations or deviations who are designated by the Department of Student Health, will be assigned to an activity commensurate with their physical limitations.

The Elective Program

Students who have completed the University requirement are eligible to participate in the elective program. These courses are available as approved by the appropriate Dean or his representative. Students may elect to take any course in physical education under the satisfactory-unsatisfactory option.

The Aquatic Specialist Program

Because of the demonstrated need for aquatic specialists in Florida, the Department of General Physical Education has initiated an Aquatic Specialist Certification program. Successful candidates will be issued a certificate and card upon completion of the competency based program. Proof of competency may be substituted in lieu of academic credit.

Course	Credit
PEN 2113 Advanced Life Saving (ARC)	1
*PEQ 2115 Water Safety Instructor (ARC)	2

•PEQ 3109 Aquatic Management 4
•HES 2400 First Aid (ARC Standard) .....
(Three Courses Required)
PEN 1251 Canoeing 1
PEN 2231 Sailing 2
PEN 1135 Skin and Scuba Diving 3
PEN 2141 Synchronized Swimming 1
PEN 1151 Springboard Diving 1

PEQ 2126 Instructors of Swimming for the Handicapped 2
(One Course Required)
•PEQ 3124 Coaching Swimming and Diving 2
•PEQ 2141 Synchronized Swimming 2

Total Credit Hours 15-18

•Required Courses

College of Veterinary Medicine

The College of Veterinary Medicine, newest of six colleges which constitute the J. Hillis Miller Health Center, was authorized by the Florida Legislature in 1965. In 1971, following the appointment of a Dean, an active planning program for the college was initiated in cooperation with an existing university committee. Construction of the Veterinary Medical Teaching Hospital commenced in the Spring of 1975 and of the Basic Science Building in December, 1975; both buildings were completed in the Fall of 1977. Forty students were admitted to the first entering class (Fall, 1976) because of limitations of laboratory and instructional space. Upon completion of the teaching laboratories in the Basic Science Building, eighty students were admitted to the second entering class in September of 1977.

THE PROFESSIONAL COLLEGE

Florida's College of Veterinary Medicine is concerned with the total health of all members of the animal kingdom, including man. Today's society expects the modern veterinarian to serve the needs of the public in a variety of significant ways. A few examples are: the practice of preventive medicine in relation to both human and animal health, solution of agricultural and wildlife problems, humane care of companion animals, research on diseases of animals, provision of wholesome food, etc. Therefore, the College of Veterinary Medicine offers unlimited opportunity for young men and women interested in medicine and the well being of animals.

GOALS

Basic goals of the new college are:

1. To educate the veterinarian trained for specific needs of Florida. Elective educational tracks will include: comparative medicine, food animal medicine, epidemiology and public health, laboratory animal medicine, aquatic medicine, environmental medicine, equine medicine, urban medicine, and general veterinary practice.
2. To perform research on the devastating subtropical animal diseases that must be controlled in order to provide wholesome food for our nation and the developing countries.
3. To provide a biomedical investigational resource of animal disease models with human counterparts. This referral center will include both metabolic and infectious diseases.
4. To provide a Veterinary Medical Center necessary for the training of interns, residents and graduate students, and for continuing education of practitioners.
5. To provide an active referral and extension program designed for the veterinary medical profession, state and federal agricultural and public health agencies, and consumers of food and health services.

MEANS TO THE GOALS

The design of the new college curriculum identifies the expanding horizons of the ever increasing domain of veterinary medicine. The curriculum provides for a 12 quarter program consisting of a core curriculum and an elective track. The core will provide the body of knowledge and the skills that are common to all veterinarians. It will encompass the first 10 quarters and although the first 8 quarters will relate primarily to the basic medical sciences, students will be introduced to physical diagnosis, radiology, and clinical problems as early as the first quarter of the first year. The core will also include experience in each of the clinical areas (clerkships) as well as provide a sound foundation in the basic sciences.

The elective tracks will permit the student to study in depth those aspects of both basic and clinical veterinary medical science which are most relevant to the individual's interests and needs. The elective track would ordinarily cover the last 2 quarters of the curriculum; however, curricular flexibility will permit students to complete portions of elective tracks (as well as core clerkships) during summer quarters, thereby allowing the highly-motivated student to complete requirements for the D.V.M. degree in less than 4 calendar years.

Three phases of study within the veterinary medical curriculum are conceptually based on the study of the normal animal (Phase 1), the study of disease processes and therapy (Phase 2), and clinical applications (Phase 3). Phase 1 and Phase 2 are organized on an organ system basis, each system is considered in turn, an approach that lends itself to the concept of comparative medicine. Phase 1 occupies the first 3 quarters of the curriculum while Phase 2 extends into the third quarter of the third year. After 8 quarters of study, the student will enter rotations through the clinical clerkships. The clinical experience consists of required or core clerkships and elective tracks or elective courses.

PRE-PROFESSIONAL COURSE REQUIREMENTS

All applicants to the professional curriculum must present a minimum of 120 quarter hours (80 semester hours) of college-level course work, exclusive of courses in physical education and military training. Credit for the College-Level examination Program (CLEP) is acceptable at the level prescribed by the University of Florida. (Pre-Veterinary students should seek appropriate pre-professional advisement at their respective accredited institutions.)

a. Biology - a minimum of 18 quarter credits including Animal Biology or Zoology (lecture and laboratory); Genetics; and Microbiology (lecture and laboratory).

b. Chemistry - a minimum of 27 quarter credits including Inorganic Chemistry (general and qualitative), lecture and laboratory; Organic Chemistry, lecture and laboratory; and Quantitative Analysis.

c. Physics - a minimum of 10 quarter credits, lecture and laboratory.

d. Mathematics - a minimum of 5 quarter credits of Calculus.

e. Animal Science - a minimum of 10 quarter credits, including Introduction to Animal Science and Feeds and Feeding.

f. Humanities - a minimum of 12 quarter credits.

g. Social Science - a minimum of 9 quarter credits.

h. English - a minimum of 9 quarter credits, including one course in English Composition.

i. Electives - variable number to bring total to 120 quarter credits.

Minor variations in quarter credits will be accepted. The applicant must complete these courses by the end of the Spring quarter in the year of application. The College of Veterinary Medicine reserves the right to waive any of these requirements in exceptional cases. The Graduate Record Examination's Aptitude Test (GRE) will be required of all applicants.

BASIS FOR SELECTION

Selection for the College of Veterinary Medicine will be made by the Dean based on recommendation of the Faculty Committee on Admissions using the following criteria as the basis for selection.

1) Residency - Florida residents or residents of an SREB compact state with a quota contract for Veterinary

Medical Education at the University of Florida.

2) Academic Performance - Evidence of superior scholastic achievement.

3) GRE Scores - Graduate Record Examinations Aptitude Test.

4) Background and Experience - Knowledge of the veterinary medical profession. Some type of animal care experience is considered desirable.

5) Letters of Reference - Evaluation of character and potential of applicant as a future Veterinarian.

6) Extra - curricular Activities of Applicant - Achievements, leadership ability, and participation in community activities.

7) Communicative Skill - A brief statement from applicant concerning reasons for seeking admission to the College of Veterinary Medicine.

8) Personal Interview.

APPLICANT INFORMATION

Applicants will be limited to residents of Florida and certain Southern Regional Education Board (SREB) compact states. Pre-veterinary requirements may be completed at any accredited 2 or 4-year college or university offering courses of content similar to those described in the University Record of the University of Florida, Gainesville. This study plan is designed to provide the educational basis that future veterinarians must have to satisfactorily meet the demands of the professional curriculum.

Admission to the College of Veterinary Medicine will be granted only for the fall quarter of each school year and only on a full-time basis. A prescribed number of student spaces is planned for each class, and a formal application with supporting credentials will be required for each student. The Faculty Committee on Admissions will be responsible for evaluating applications and recommending to the Dean the candidates for the entering class in the professional curriculum. All pre-professional requirements must be completed by the end of the spring quarter of the academic year in which application is made. Students reapplying must submit a new application for each application period. It will be the policy of the College not to admit students who have been dismissed by other schools of veterinary medicine.

Further detailed information may be obtained from the Office of the Dean for Student Services, College of Veterinary Medicine, University of Florida, Gainesville, 32610.

Division of Military Science

The University of Florida offers instruction in the Military Sciences as an integral part of its curriculum. The Departments of the Army, Navy, and Air Force each maintain a Reserve Officers Training Corps (ROTC) and provide staffs of military personnel for the instruction and administration of cadets and midshipmen.

ARMY BASIC COURSE, NAVY BASIC COURSE, AND AIR FORCE GENERAL MILITARY EDUCATION PROGRAM

The Army and Navy Basic Courses and the Air Force General Military Course include six quarters of instruction. Non-U.S. citizens must receive departmental approval before enrollment.

Army and Air Force cadets are issued uniforms and textbooks by the University and are held financially responsible for the care of such property and for its prompt return upon proper call.

Navy students are issued uniforms and textbooks by the Navy and are also held financially responsible for the care of such property and for its prompt return when directed.

STATUS OF STUDENTS WHO HAVE HAD MILITARY TRAINING AT OTHER SCHOOLS

Students transferring from other college level institutions with ROTC units are allowed credit for military studies completed at such institutions, up to the amount allowed by the institution from which the transfer is made, provided such credit does not exceed six quarter hours for the Army or Navy Basic Course or the Air Force General Military Course. A cadet who transfers to another institution where an ROTC detachment of the same service is located may transfer his membership in the Army or Navy Advanced Course or the Air Force Professional Officer Course to that detachment. The eligibility for admission of such students to Military Science, Naval Science, and Aerospace Studies courses at the University of Florida is determined by the Professor of Military Science, Professor of Naval Science, or the Professor of Aerospace Studies as appropriate.

MILITARY COMMITMENT UPON COURSE COMPLETION

Non-Scholarship students enrolled in Army, Air Force, or Navy ROTC incur *no* military commitment during their first two years (Basic Course) in the program. Upon selection by the respective departments, students completing the basic course or its equivalent may enter the Advanced Course (junior/senior ROTC). Such students execute a contract at time of entry which obligates them upon successful completion of the Advanced Course and commissioning to serve on active duty for a period of not less than three years for Army, three years for Navy, and four years for Air Force, subject to orders of the appropriate service secretary and to continue as a member of a Regular or Reserve component of that service until, at the earliest the sixth, and not later than the eighth anniversary of the receipt of commission. ROTC Scholarship students incur an identical military commitment except they must serve four years on active duty.

ROTC SCHOLARSHIP PROGRAM

The ROTC Vitalization Act of 1964 provides for College Scholarships to ROTC cadets and midshipmen. Those receiving scholarships are selected on a competitive basis. The scholarships pay the cost of tuition, books, fees, supplies and equipment, plus a monthly subsistence allowance of $100. Scholarships are offered for one, two, three, and four years.

UNIFORMS

The ROTC uniforms are identical to the regulation uniform except for insignia. Cadets and midshipmen are required to wear the uniform during drill periods.

Newly entering students in the Army and Air Force ROTC are issued required uniforms and texts from supply. The uniforms and texts remain the property of the ROTC and are returned to supply during quarters of nonattendance, transfer to another institution, or upon completion of the prescribed course of instruction.

A cadet entering the Professional Officer (Advanced) Course is issued a new regulation uniform which he retains when he receives his commission.

Navy uniforms are issued to midshipmen in two ways: Some uniforms are permanent issue so long as satisfactory NROTC participation is carried out; other uniforms are issued especially for special events such as Summer cruises and must be returned.

ARMY ADVANCED COURSE

The general objective of the course of instruction is to provide junior officers who by their education, training, and inherent qualities are suitable for continued development as officers in the United States Army. The aim is to provide a basic military education, and, in conjunction with other college disciplines, to develop individual character and attributes essential to an officer.

The Army Advanced Course includes six quarters of instruction at the University and six weeks Summer camp at a military installation, which normally is attended by the student at the end of his first year's Advanced Course work. Each student applicant for the Advanced Course must have completed the Army ROTC Basic Course, attended a basic ROTC Summer camp of six weeks in lieu thereof, or have had previous military training acceptable as a substitute therefor. Cadets who have successfully completed three years of Junior ROTC may be granted a waiver of the Basic Course upon approval of the PMS. Final selection of students for the Advanced Course is made by the President of the University and the Professor of Military Science.

Students are issued regulation Army uniforms and textbooks. The uniforms and text remain the property of the ROTC and are returned to supply when the student receives his degree and commission. Each student receives from the United States Government a monetary subsistence allowance, presently $100.00 per month, which is paid monthly during the period of enrollment in the Advanced Course for not more than a total of 20 months. Students are paid travel to and from the six-weeks Summer camp; while at camp they are provided quarters, rations and one-half of a second lieutenant's pay per month. All students take the General Military Science course. Upon the student's successful completion of the Advanced Course and graduation, the student is commissioned a second lieutenant in the United States Army Reserve in a branch of the Army as determined by a consideration of his choice, his academic major, his aptitude and the needs of the Army.

Outstanding Advanced Course students are designated "Distinguished Military Students" and upon graduation from the University are designated "Distinguished Military Graduates." A Distinguished Military Student may apply for appointment as second lieutenant in the Regular Army at any

time prior to his designation as "Distinguished Military Graduate." A number of University of Florida graduates accept Regular Army appointments each year.

NAVAL RESERVE OFFICERS TRAINING CORPS

The NROTC Unit was established at the University of Florida in 1972 to provide a source from which qualified officers could be obtained for the Navy and Marine Corps. Depending upon which part of the program students are affiliated with, they are tendered commissions in either the Regular Navy, the Naval Reserve, the Marine Corps or the Marine Corps Reserve, the latter two being at the student's option.

The program consists of a Naval Science Course and a no-credit two-hour leadership laboratory each quarter for four academic years. Shipboard engineering systems, seapower and maritime symposia, terrestrial and celestial navigation, and management and leadership are included in the curriculum. Training cruises, usually of six weeks duration with pay during the summer, are also part of the program.

Students may participate with or without a scholarship. Those who have scholarships have their tuition, books, fees, and some other expenses paid by the Navy. They also receive $100 per month for a maximum of 40 months, during the academic years. Non-scholarship students, or College Program students, do not receive these emoluments. However, they do receive Naval Science textbooks and uniforms free and, in the Junior and Senior years, receive $100 per month during the academic year (up to 20 months.) Scholarships are usually awarded after national competition among high school Seniors. However, College Program students can be awarded scholarships for a period of less than four years and they actually have an advantage over high school students. Scholarship students participate in three Summer cruises; the College Program students become involved in only one cruise, between their Junior and Senior years. There are also Two-Year Scholarship Programs and a Two-Year College Program available. Application to enter these programs should be made by Spring Quarter of the sophomore year; or if in a five-year curriculum, by Spring Quarter of the Junior year.

Navy option graduates of the NROTC program will generally receive advanced training in one of the following areas: Nuclear Propulsion, Naval Aviation, or Surface Warfare. Marine Corps option graduates receive a six-month professional course before further assignment. The program also provides for a limited number of graduates to enter the Civil Engineering, Supply, Medical, or Dental Corps.

During the first two years of the program, there are no obligations. However, with commencement of the Junior year students are obligated to serve on active duty after completing the program and receiving their baccalaureate degree. For scholarship students the obligation is four years, unless, of course, special programs are undertaken.

AIR FORCE OFFICER TRAINING CORPS

The Department of Air Force Aerospace Studies was established to select and prepare students, through a permanent program of Instruction, to serve as officers in the Regular and Reserve components of the United States Air Force. The curriculum emphasizes the uniformly high level of military understanding and knowledge required of all Air Force officers.

AFROTC training is divided into two phases: The first two years constitute the General Military Course; the last two the Professional Officer Course. The Department offers a four-year and a two-year program. Each of these options leads to a commission in the Air Force. The four-year program requires completion of both the General Military Course and Professional Officer Course. Students with prior active military service or previous training at Military schools may, on the basis of their experience, receive a waiver for portions of the General Military Course. The two-year program requires, as a substitute for the General Military course, completion of a six-week Field Training Course at an Air Force Base prior to formal enrollment in the Professional Officer Course. Junior College and other non-ROTC college transfer students with no previous ROTC training, who qualify academically, are eligible for the two-year program.

AFROTC training is offered to both men and women students. Application for post-commissioning flying training is limited to men only.

GENERAL MILITARY COURSE

The General Military Course (GMC), a two-year course, examines the role of U.S. military forces in the contemporary world, with particular attention to the United States Air Force, its organization and mission. The functions of strategic offensive and defensive forces, general purpose, and aerospace support forces are covered. The development of airpower over the last sixty years is examined by tracing the various concepts of employment of airpower and by focusing on factors which prompted research and technological change. A variety of events and elements in the history of air-power are stressed, especially where these provide significant examples of the impact of airpower on strategic thought.

THE PROFESSIONAL OFFICER COURSE

Enrollment in the Professional Office Course (POC) is open to applicants who demonstrate a high officer potential. Applicant must: (1) be able to fulfill all requirements for a commission prior to his 30th (26½ years if flying applicant) birthday; (2) have two years of academic enrollment remaining in order to obtain a degree; (3) sign a written contract agreeing to complete the course; (4) be a citizen of the United States; (5) pass the Air Force Officers' Qualification Test; (6) pass the Officer physical examination; (7) terminate membership (if member) of any reserve component, enlist in Air Force Reserve (Obligated Reserve Section); and (8) have an academic average of 2.0 or above. Veterans entering the University who desire a commission through AFROTC should contact the Professor of Aerospace Studies prior to registration.

All Professional Officer Course cadets receive subsistence amounting to $100.00 per month for up to 20 months. This is in addition to the pay received for the four-week Field Training which is normally accomplished between the Sophomore and Junior year. Field Training pay is 50 percent of the basic pay of a Second Lieutenant. Cadets also receive compensation for travel expenses and are furnished food, housing, uniforms, and medical care while attending Field Training, which is conducted at regularly established Air Force Bases. When the student successfully completes the Professional Office Course and graduates from the University, he is commissioned a second lieutenant in the United States Air Force Reserve. Normally he will be called to active duty and given an assignment commensurate with his academic major, the needs of the Air Force and his personal desires. The active duty requirement for those who enter and satisfactorily complete pilot or navigator training is six years from initial call to active duty. For others, the requirement is four years after initial call to active duty.

Departments

Accounting 188
Advertising 189
Aerospace Engineering 189
Agricultural and Extension Education 190
Agricultural Engineering 191
Agriculture — General and Cross Departmental 190
Agronomy 192
American Studies 192
Animal Science 193
Animal Sciences — General and Cross Departmental 194
Anthropology 194
Architecture 196
Art 197
Arts & Sciences — General and Cross Departmental 199
Asian Studies 200
Astronomy 201
Atmospheric Sciences 202

Behavioral Studies 202
Biochemistry and Molecular Biology 203
Biological Sciences 203
Biological Sciences—General Biology 204
Botany 204
Broadcasting 205
Building Construction 206
Business Administration — General 207

Career Development Program 207
Chemical Engineering 207
Chemistry 209
Chinese 246
Civil Engineering 212
Classics 214
Clinical and Community Dietetics 215
Clinical Psychology 216
Coastal and Oceanographic Engineering 216
Communication 216
Computer and Information Sciences 217
Cooperative Education Program 219
Criminal Justice 219

Dairy Science 220

Economics 220
Education — Administration and Supervision 223
Education — Counselor 223
Education — Foundations 224
Education — General Teacher 225
Education — Instructional Leadership and Support 226
Education — Special 227
Education — Subject Specialization Teacher Education 229
Electrical Engineering 231
Engineering Common Courses 233
Engineering Graphics 234
Engineering Science and Mechanics 234
Engineering Technology 235
English 236
Entomology and Nematology 240
Environmental Engineering Sciences 241

Finance and Insurance 242
Fine Arts 243
Food and Resource Economics 243
Food Science and Human Nutrition 245
Foreign Language — Cross Departmental 246
Forest Resources & Conservation 251
French 248
Fruit Crops 252

Geography 252
Geology 254
German 246
Gerontology 256
Greek 215

Health and Hospital Administration 256
Health Education and Safety 291
Health Related Professions 256
Hebrew 215
History 257
Horticultural Science 261
Humanities 261

Industrial and Systems Engineering 262
Interior Design 264
Italian 249

Japanese 246
Journalism 264

Landscape Architecture 265
Latin 215
Latin American Studies 266
Linguistics 266

Management 267
Marketing 267
Materials Science and Engineering 268
Mathematics 270
Mechanical Engineering 274
Mechanized Agriculture 275
Medical Technology 276
Medicine 276
Microbiology and Cell Science 276
Military Science — Air Force 278
Military Science — Army 278
Military Science — Navy 279
Music 280

Nuclear Engineering Sciences 283
Nursing 284

Occupational Therapy 285
Ornamental Horticulture 285

Pest Management and Plant Protection 286
Pharmaceutical Chemistry 286
Pharmacology 287
Pharmacy 287
Philosophy 289
Physical Education — General 295
Physical Education — Professional 291
Physical Sciences 295
Physical Therapy 296
Physician's Assistant Program 297
Physics 298
Plant Pathology 300
Plant Sciences — General 301
Polish 247
Political Science 301
Portuguese 249
Poultry Science 304
Psychology 305
Public Relations 308

Real Estate and Urban Analysis 309
Recreation 294
Rehabilitation Counseling 309
Religion 310
Romance Languages and Literature 247
Russian 247

Social Sciences 311
Sociology 312
Soil Science 314
Spanish 249
Speech 315
Statistics 318
Swahili 250

Theatre 319

University College Honors 323
University College Integrative Studies 323
Urban and Regional Planning 321

Vegetable Crops 321
Veterinary Science 322

Zoology 322

The quarter[s] in which undergraduate courses will be taught is [are] indicated by the following codes: F-Fall, W-Winter, S-Spring, SS-Summer. The absence of a code for an undergraduate course indicates the course will be taught upon sufficient demand or as faculty become available.

STATEWIDE COURSE NUMBERING SYSTEM

Public post secondary institutions in Florida are required to implement a common course numbering system that has been developed at the state level. The objective is to provide a common classification system for all disciplinary and interdisciplinary categories and sub-categories based on the professional judgement of the faculties in the given discipline areas.

The course offerings described below are identified by the statewide course numbering system. The statewide course number includes a three-letter prefix, a four-digit number, and a one-letter suffix for laboratory courses. The three letters identify the general subject matter. The first digit indicates the course level. The next three digits were assigned by the faculty in the appropriate discipline according to the common course numbering procedures. The suffix of "L" means that the course is a laboratory course. The suffix of "C" means that the course has both class and laboratory elements. Courses without labs have no suffix.

The University of Florida will accept for full credit all transfer courses that have a common prefix and number.

ACCOUNTING
School of Accounting

INSTRUCTIONAL STAFF 1977-78

Simmons, J.K., Director: Abdel-khalik, A.R.; Ajinkya, B.B.; Anderson, C.A.; Bailey, K.E.; Benninger, L.J.; Boyles, J.V.; Brown, C.E.; Christmann, T.G.; Collins, W.A.; Friedberg, A.H.; Gift, M.J.; Gleim, I.N.; Holstrum, G.L.; Jain, R.; Judd, A.; Lee, T.E.; Maddocks, P.M.; Mayper, A.G.; McDonald, C.L.; Ray, D.D.; Scroggin, J.; Smith, E.D.; Snowball, D.A.T.; Stewart, D.; Stone, W.E.; Teichman, R.J.; Wallace, W.A.; Welch, P.R.; Westmoreland, G.; Wragge, J.H.; Yu, S.C.

Courses numbered 3000 or higher are open only to students with Junior standing or above. Courses numbered below 3000 are not open to students with 4AC classification. Note, in addition, the specific prerequisites for certain courses. A student may not take an accounting course [with the exception of ACC 2301] unless a grade of "C" or better has been earned in each accounting prerequisite to that course.

ACC 2001 Introduction to Accounting. F, W, S, SS.
Credits: 5
Conceptual introduction to financial accounting and managerial accounting. Emphasizes the role of accounting in the resource allocation process; alternative wealth and income measurement models; preparation, interpretation and analysis of conventional financial statements.

ACC 2103 Financial Accounting 1. F, W, S, SS.
Credits: 4; Prereq: ACC 2001.
A study of the basic accounting cycle. The assumptions underlying income determination and the theories of matching costs and revenue. Asset acquisition and valuation. Required for accounting major students.

ACC 2301 Elementary Managerial Accounting. F, W, S, SS.
Credits: 3; Prereq: ACC 2001.
Accounting for cost reporting and control. Reports, statements and analytical tools used by management. Especially recommended for students not intending to be accounting majors.

ACC 3123 Financial Accounting 2. F, W, S, SS.
Credits: 4; Prereq: ACC 2103 and FIN 3403.
Continuation of ACC 2103.

††Grading is on a S-U basis only.

ACC 3143 Financial Accounting 3. F, W, S, SS.
Credits: 4; Prereq: ACC 3123.
Continuation of ACC 2103 and ACC 3123.

ACC 3401 Cost and Management Accounting 1. F, W, S, SS.
Credits: 4; Prereq: ACC 2001 and ACC 2103.
A study of basic cost terminology; an introduction to management accounting including job, process and joint product cost accounting.

ACC 3421 Cost and Management Accounting 2. F, W, S, SS.
Credits: 4; Prereq: ACC 3401 and FIN 3403.
An intensive study of financial information useful for planning and control with emphasis upon standard costing.

ACC 4443 Accounting for Management. S.
Credits: 4; Prereq: ACC 3421 and QMB 3700.
Interpretative accounting for management purposes.

ACC 4501 Income Tax Accounting. F, W, S, SS.
Credits: 4; Prereq: ACC 2001.
Federal income tax law and related management and accounting problems.

ACC 4541 Advanced Federal Tax Accounting. F, W, S.
Credits: 3, Prereq: ACC 4501.
Management and accounting problems encountered by various entities under federal tax law.

ACC 4602 Auditing Theory and Internal Control 1. F, W, S, SS.
Credits: 4; Prereq: ACC 3143, ACC 3421, and ACC 4741.
A study of auditing standards and procedures with emphasis on ethics, legal liability, internal control, audit evidence, auditor reports and an introduction to statistical sampling and auditing EDP systems.

ACC 4741 Information Systems for Management Planning and Control. W.
Credits: 4; Prereq: CAP 2010.
The application of the systems approach to the development of the accountants' function of providing information for management.

ACC 4905 Individual Work in Taxation. F, W, S, SS.
Credits: 1 to 3; Prereq: ACC 4501 and permission of the School.
For students who wish to support regular coursework in taxation by individual study under guidance. May be repeated with change in content up to a maximum of 6 credits.

ACC 4934 Special Topics. F, W, S.
Credits: 1 to 4; Prereq: Permission of the School.
Course of variable content providing an opportunity for study in depth of topics not offered in other courses and of topics of special current significance. May be repeated with change in content up to a maximum of 8 credits.

ACC 4940 Supervised Accounting Internship. F, W, S, SS.
Credits: 3 to 5††; Prereq: consent of advisor.
Applied work in professional accounting. Requires several papers and reports. May be repeated with change of content up to a maximum of 10 credits.

ADVANCED ACCOUNTANCY AND GRADUATE COURSES

Courses in the 5000 group are available to undergraduate students with the approval of their advisor. Registration in 6000 level courses requires advisor approval.

ACC 5011 Financial Accounting. F, W, S.
Credits: 5; (not for accounting majors).

ACC 5214 Advanced Financial Accounting for Complex Organizations. F, W, S, SS.
Credits: 4; Prereq: ACC 3143.

ACC 5231 Financial Reporting Standards. F, W, S.
Credits: 4; Prereq: ACC 3143.

ACC 5513 Federal Income Taxation of Business Organizations. F, S.
Credits: 3; Prereq: ACC 4501.

ACC 5531 Federal Income Tax Planning. W.
Credits: 3; Prereq: ACC 4501.

ACC 5632 Auditing Theory and Internal Control 2. W.
Credits: 4; Prereq: ACC 4602 and ECO 3411.

ACC 5745 Management Information Systems Theory. S.
Credits: 4; Prereq: CAP 2010.

ACC 5751 Administration of the Systems Function.
Credits: 4; Prereq: ACC 5745 or ACC 4741 with consent of instructor.

ACC 5846 Advanced Accounting Analysis for the Controllership Function.
Credits: 4; Prereq: ACC 3421.

ACC 5865 Public Administration Accounting. W.
Credits: 4; Prereq: ACC 3123.

ACC 5870 CPA Examination Review. S.
Credits: 4; Prereq: Consent of instructor.

ACC 6290 Accounting Theory.
Credits: 4

ACC 6411 Cost Accounting Theory and Applications.
Credits: 4

ACC 6512 The Federal Income Tax: Functional Analysis.
Credits: 5

ACC 6692 Auditing and Financial Accounting Issues and Cases.
Credits: 4

ACC 6791 Management Information Systems Seminar.
Credits: 4

ACC 6811 Social and Economic Accounting.
Credits: 5

ACC 6821 Interdisciplinary Considerations in Accounting Theory Development.
Credits: 5

ACC 6831 Accounting and Analytical Methods.
Credits: 5

ACC 6905 Individual Work in Accounting.
Credits: 1 to 5

ACC 6910 Supervised Research.
Credits: 1 to 5++

ACC 6940 Supervised Teaching of Accounting.
Credits: 1 to 5++

ACC 6971 Masters Research.
Credits: 1 to 15++

ACC 7292 Accounting Information for External Users.
Credits: 5

ACC 7395 Accounting Theory as Related to Managerial Decision Making.
Credits: 5

ACC 7805 Development of Thought in Accounting Theory.
Credits: 5

ACC 7925 Accounting Research Workshop.
Credits: 4

ACC 7980 Doctoral Research.
Credits: 1 to 15††

ADVERTISING
College of Journalism and Communications

INSTRUCTIONAL STAFF 1977-78

Terhune, J.L., Chairman; Carr, H.L.; Holland, D.R.; Hooper, L.J.; Malickson, D.L.; Pierce, F.N.; Pisani, J.R.

The program in advertising is designed primarily to train men and women for planning, creative, administrative, sales or other positions with advertisers, media, or agencies. These courses, however, may be taken for elective credit by students in all Upper Division units of the University. Students who are interested in major work in Advertising, Journalism, Radio, Television and Public Relations are also referred to course offerings under Broadcasting, Journalism and Public Relations and to the requirements of the College of Journalism and Communications.

ADV 3000 Elements of Advertising. F, W, S, SS.
Credits: 4; Prereq: Junior standing or MMC 2100.
The role of advertising in a free economy, and its place in the media of mass communications. A study of advertising appeals, product and market research, selection of media, testing of advertising effectiveness, organization of the advertising profession.

ADV 4101 Copywriting and Visualization. F, W, S, SS.
Credits: 4; Prereq: MMC 2100 and ADV 3000.
Theory and practice of writing copy and preparing rough visuals for print advertising, including newspapers, magazines, direct mail and outdoor advertising.

ADV 4102 Advanced Copywriting. W, S.
Credits: 4; Prereq: ADV 4103 and ADV 4101.
Advanced projects in major advertising fields — e.g., consumer, public service and industrial advertising. Emphasis on research, planning, and writing. Group discussions and individual conferences.

ADV 4103 Radio-TV Advertising. F, W, S, SS.
Credits: 4; Prereq: MMC 2100 and ADV 3000.
Study of economics, standards and ethics of radio and television advertising copy. Preparation and presentation of commercial broadcast copy.

ADV 4200 Advertising Graphics and Production. F, S.
Credits: 4; Prereq: ADV 3000.
Designed to acquaint students with the terminology and production techniques of the advertising business. Lectures will cover such subjects as typography, printing, engraving, photography, silk screening, direct mail, exhibits, displays, packaging.

ADV 4300 Media Planning Strategy. F, S.
Credits: 4; Prereq: ADV 3000.
Designed to acquaint students with the problems, techniques and strategy of buying advertising space and time effectively and economically in newspapers, magazines, radio, television and outdoor media.

ADV 4400 International Advertising.
Credits: 4; Prereq: ADV 3000 and Senior standing.
Advertising in the world's markets. A review of the various advertising methods and techniques in copy and layout used outside the U.S. Emphasis on the relationship of foreign advertising to the American style.

ADV 4500 Public Opinion Theory and Advertising. F, W, S, SS.
Credits: 4, Prereq: Senior standing.
The dynamics of advertising and promoting goods, services, and ideas in terms of modern public opinion concepts, communication theory, semantics and the behavioral sciences.

ADV 4501 Advertising Research Techniques. F, W, S, SS.
Credits: 4; Prereq: Senior standing.
The application of both survey and experimental techniques to determine the effectiveness of print and broadcast advertising messages. Emphasis on stating objectives and determining by pre- and post-testing of advertising copy the attainment of goals. Special attention to secondary research sources. Use of case studies.

ADV 4600 Advertising Agency Management. W, S.
Credits: 4
An overview of the advertising agency business in the U.S. with emphasis on the advertising agency as a business operation. Includes billing procedures, income sources, cost-accounting techniques, internal operations, personnel policies, the law and the agency and current trends.

ADV 4700 Retail Advertising. F, W, S.
Credits: 4; Prereq: ADV 4101 and consent of the instructor.
A Senior course bringing together work of the preceding advertising courses into actual experience and training in the planning, preparation, presentation and selling of retail advertising.

ADV 4800 Advertising Campaigns. F, W, S, SS.
Credits: 4; Prereq: ADV 4103, ADV 4101 and Senior standing.
An advanced advertising course requiring the student to prepare and produce complete general advertising campaigns. Emphasis is placed on production methods, costs, research and media analysis.

ADV 4905 Individual Problems. F, W, S, SS.
Credits: 1 to 5
At least 15 hours of Advertising in the Upper Division, and approval of the Chairman. The student and the instructor concerned will choose a problem or project which will give the student experience in his major field.

ADV 4930 Special Study in Advertising. F, W, S.
Credits: 1 to 5
Open only to advertising Seniors with approval of the Chairman. Variable content, providing opportunity for study in academic areas of Advertising such as Comparative Advertising, Computer Applications in Advertising Research and other fields within the province of the College. May be repeated with change of content up to a maximum of 6 credits.

ADV 4931 Seminar: ethics and Problems in Adverstising. F, W, S, SS.
Credits: 4
Open only to advertising Seniors in their graduating quarter, or on approval of instructor. Bringing together the work of preceding advertising courses and projecting this knowledge to the solution of problems that will arise in the professional field.

ADV 4932 Individual Problems in Advertising (Honors).
Credits: 1 to 5
At least 15 hours of Advertising in the Upper Division, good standing in the Honors Program, approval of the Honors Committee and approval of the Chairman. The student and the instructor concerned will choose a problem or project which is consonant with the objectives of the Honors Program.

ADV 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5††; Prereq: At least 15 hours of professional courses must have been earned. Must have academic adviser, department and college approval to receive credit.
Students and instructor concerned will select an appropriate work area related to the field of advertising or an appropriate communications area where the students may gain work experience and/or on-the-job training. (May be repeated for a total of 10 hours. Content must be changed).

AEROSPACE ENGINEERING
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Millsaps, Knox, Chairman; Anderson, R.C.; Bisplinghoff, R.L.; Boykin, W.H., Jr.; Clarkson, M.H.; Cristescu, N.; Doddington, H.W.; Ebcioglu, I.K.; Edson, C.G.; Eisenberg, M.A.; Fearn, R.L.; Green, A.E.S.; Grinter, L.E.; Hammack, J.L., Jr.; Hartley, C.S.; Hemp, G.W.; Hoover, J.W.; Kalman, R.E.; Keefer, D.R.; Kurzweg, U.H.; Leadon, B.M.; Lindgren, E.R.; Lu, S.Y.; Malvern, L.E.; Milton, J.E.; Nevill, G.E., Jr.; Partheniades, E.; Ross, C.A.; Sierakowski, R.L.; Walsh, E.K.

EAS 1930 Freshman Seminar in Aerospace Engineering. F, W, S, SS.
Credits: 1††
Discussion of a field of aerospace engineering endeavor. Consult department each quarter for particular subject offered. May be repeated with a change of content up to a maximum of 3 credits.

EAS 3001 Elements of Aeronautics and Astronautics. F.
Credits: 3; Prereq: 2 quarters of physics or physical science.
Survey of topics in aeronautics and astronautics. History of flight. Sociological and economic effects of aerospace technology. Elements of the technology of flight.

EAS 4002 L Aerospace Laboratory. W, S.
Credits: 1; Prereq: EAS 4106.
Laboratory experiments in aerospace engineering.

EAS 4105 Applied Aerodynamics. W.
Credits: 4; Prereq: EAS 3001 or consent of instructor.
Aircraft performance, aerodynamic design data, and elements of stability and control.

EAS 4106 Low Speed Aerodynamics. F.
Credits: 5; Prereq: EGN 3353 and EGM 4312.
Basic equations of motion for the flow of an incompressible fluid. Potential flow, boundary layer theory and turbulence. Applications to problems in low speed aerodynamics. Wind tunnel experiments.

EAS 4112 High Speed Aerodynamics. W.
Credits: 5; Prereq: EGN 3353, EGM 4312 and EAS 4106.
Basic equations of motion for the flow of a compressible fluid. Isentropic flow, normal and oblique shock waves, linearized flows, method of characteristics. Applications to problems in high speed aerodynamics.

EAS 4122 Wing and Airfoil Theory. S.
Credits: 4; Prereq: EAS 4106 and EAS 4112 or consent of instructor.
Selected topics in the theory of flight. Included are airfoil theory and Prandtl's lifting line theory for low speed, high aspect ratio wings.

EAS 4200 Aerospace Structures 1. S.
Credits: 5; Prereq: EAS 3001 and EGM 3400; Coreq: EGM 3520.
Types of flight structures. Flight and dynamic loads. Bending and shear analysis of flight structures. Lecture, laboratory and problem solving sessions.

††Grading is on S-U basis only.

Descriptions

AGRICULTURE

EAS 4201L Aerospace Structures Laboratory. F, W.
Credits 1; Prereq: EAS 4200.
Experimental methods of stress determination in flight structures. Proof test of structures and demonstration of failure modes.

EAS 4210 Aerospace Structures 2. F.
Credits: 5, Prereq. EAS 4200.
Elastic analysis of flight structures. Matrix methods for deflections and indeterminate analyses. Use of computers in solutions.

EAS 4220 Aerospace Structures 3. W.
Credits: 4; Prereq: EAS 4200.
Allowable loads and strength analysis. Practical problems in strength checking of structural components. Design choices in structural materials and configurations.

EAS 4230 Introductory Aeroelasticity. S.
Credits: 3; Prereq: EAS 4200 and EAS 4106.
Vibrations in typical flight structures. Self-excited aeroelastic systems. Stability of oscillating system. Fundamentals of surface flutter. Static aeroelastic effects. Acoustics in aero-space applications.

EAS 4240 Aerospace Structural Composites 1.
Credits: 3; Prereq: EMA 3010 and EAS 4200.
Various types and applications of structural composites used in flight structures. Introduction to analysis of structural composites.

EAS 4300 Aerospace Propulsion 1. F.
Credits: 5; Prereq: EML 3100.
Supersonic diabatic flow: the turbojet; the ramjet. Rocket performance criteria. Rocket fuels; design of liquid and solid fueled rockets. High performance systems for aerospace propulsion. Lectures, laboratory experiments, and problem solving sessions.

EAS 4310 Aerospace Propulsion 2. W.
Credits: 3; Prereq: EAS 4300.
Requirements for propulsion systems on space missions. High specific impulse systems: nuclear rocket; electric propulsion. Special space applications.

EAS 4400 Stability and Control of Aircraft.
Credits: 4; Prereq: EGM 4312 and EAS 4105.
Static stability and control; equations of motion; stability derivatives; stability of longitudinal and lateral motion of aircraft.

EAS 4412 Principles of Guidance and Control.
Credits: 3; Prereq: EGM 3311 or consent of instructor.
Review of current missile guidance systems. Relations between guidance and control. The control function: open and closed loop servo systems. Detection and information gathering as a factor in guidance precision.

EAS 4510 Problems in Astronautics. S.
Credits: 3; Prereq: EGM 4312.
Newtonian orbits; celestial coordinate systems. Observations in the solar system. Review of astrophysics. Instruments used in space science.

EAS 4602 Elements of Manned Atmospheric and Space Flight. S.
Credits: 3
Introduction to man's requirements in atmospheric and space flight. An engineering approach to psychic stress relief and physiological well-being in the aerospace environment.

EAS 4700 Aerospace Design 1. W.
Credits: 3; Prereq: EAS 4106 and EAS 4200. Application of the principles of analysis and design to aerospace vehicle problems.

EAS 4710 Aerospace Design 2. S.
Credits: 3; Prereq: EAS 4700.
Second part of ASE 485-486.

††Grading is on a S-U basis only.

EAS 4803 Instrumentation for Aerospace Engineers. W, S.
Credits: 3; Prereq: EEL 3001 or consent of instructor.
An introduction to the techniques of modern instrumentation for aerospace testing, research and development.

EAS 4905 Individual Study in Aerospace Engineering. F, W, S, SS.
Credits: 1 to 6. May be repeated to a maximum of 12 credits. Prereq. Recommendation of Department Chairman.
Selected problems or projects in the student's major field of engineering study.

EAS 4933 Senior Seminar. F, W, S, SS.
Credits: 1; Prereq: 4EG classification.
Student presentations and discussions on subjects of current and continuing interest in engineering science and aerospace engineering.

EAS 4939 Special Topics in Aerospace Engineering. F, W, S, SS
Credits: 1 to 6; Prereq: Permission of instructor. May be repeated with change in content to a maximum of 12 credits.

EAS 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: 4EG classification; One term of industrial employment including extra work according to a pre-approved outline.
Practical engineering work under industrial supervision, as set forth in College Regulations.

GRADUATE COURSES

EAS 6135 The Dynamics of Real Gases 1.
Credits: 3

EAS 6136 The Dynamics of Real Gases 2.
Credits: 3

EAS 6137 The Dynamics of Real Gases 3.
Credits: 3

EAS 6141 Advanced Plasma Topics.
Credits: 3

EAS 6142 Probe Techniques for Plasma Diagnostics.
Credits: 3

EAS 6221 Advanced Aerospace Structures 1.
Credits: 3

EAS 6222 Advanced Aerospace Structures 2.
Credits: 3

EAS 6223 Advanced Aerospace Structures 3.
Credits: 3

EAS 6241 Aerospace Structural Composites 2.
Credits: 3

EAS 6503 Astronautical Mechanics 1.
Credits: 3

EAS 6504 Astronautical Mechanics 2.
Credits: 3

EAS 6514 Near Earth Space Operations.
Credits: 3

EAS 6720 Advanced Aerospace Design.
Credits: 1 to 9

EAS 6804L Advanced Space Instrumentation Laboratory.
Credits: 1 to 9

EAS 6905 Aerospace Research.
Credits: 1 to 9

EAS 6910 Supervised Research.
Credits: 1 to 5††

EAS 6935 Graduate Seminar.
Credits: 1††

EAS 6939 Special Topics in Aerospace Engineering.
Credits: 1 to 9

EAS 6940 Supervised Teaching.
Credits: 1 to 5††

EAS 6971 Master's Research.
Credits: 1 to 15††

EAS 7980 Doctoral Research.
Credits: 1 to 15††

AGRICULTURE
College of Agriculture

GENERAL AND CROSS-DEPARTMENTAL COURSES

AGG 1101 Introductions to Careers in the Agricultural Sciences. W, S.
Credits: 2
An introduction to the various educational programs within the Institute of Food and Agricultural Sciences with special emphasis on programs of study, academic requirements, professional standards, and career opportunities.

AGG 2501 Agriculture in the Environment. F, W, S.
Credits: 2
Non technical lectures on the comparative relationship of agriculture to ecology and environmental impact.

AGG 4603 Agricultural Communications. F, W, S.
Credits: 4
Lecture-laboratory. Basic instruction for agriculture majors in use of mass media and specialized media in agricultural information programs.

AGRICULTURAL AND EXTENSION EDUCATION
College of Agriculture

INSTRUCTIONAL STAFF 1976-77

Beeman, C.E., Chairman; App, J.L.; Archer, B.B.; Cheek, J.G.; Farrington, W.S.; McGhee, M.B.; Seiders, R.W.; Straughn, A.A.; Taylor, C.L.; Wicks, L.L.; Woeste, J.L.

AEE 3200 Instructional Techniques in Agricultural Education. W, SS.
Credits: 4
Introduction to general techniques of teaching, selection of procedures, instructional resource management, learning environment and activities, student-teacher rapport, media and materials, and evaluation.

AEE 3313 Development and Role of Extension Education. F.
Credits: 4
Extension philosophy, programs, methods and leadership principles; history of federal, state and local leadership in the development of the cooperative extension service.

AEE 3323 Development & Philosophy of Agricultural Education. F, S, SS.
Credits: 4
An analysis of evolving concepts and philosophies of agricultural education programs with emphasis upon history, legislation, and principles underlying organization and practice.

AEE 4224 Special Methods in Teaching Vocational Agriculture. F, W, SS.
Credits: 4; Prereq: AEE 3200.
Organization of the subject matter and methods of teaching agriculture.

AEE 4227 Laboratory Practices in Teaching Agricultural Education. W, SS.
Credits: 4, Prereq: AEE 3323, AEE 3200, MAG 3220, MAG 4225.

Laboratory practices in teaching mechanics and other operative skills, conducting field and laboratory classes, providing space and teaching facilities.

AEE 4424 Agricultural Youth Programs. W.
Credits: 4; Prereq: Junior Standing
Designed to develop understanding and abilities in conducting 4-H, FFA, and other agricultural youth programs.

AEE 4504 Organization of Agricultural Education Programs. F, S, SS.
Credits: 4
Principles and practices used in designing courses of instruction for effective teaching and total program development.

AEE 4624 Career and Pre-Vocational Education in Agriculture. F, SS.
Credits: 4
Philosophy and operational procedures of career and pre-vocational education in agriculture with particular emphasis on the Junior High or Middle School agriculture program, program design, objectives, articulation with existing programs, clientele, methods and procedures.

AEE 4905 Individual Work in Agricultural and Extension Education. F, W, S, SS.
Credits: 1 to 8, Prereq: Consent of the instructor.
Topics and special problems selected from such fields as 4-H and FFA work, demonstrations, farm and home management, rural development, and preschool planning and post school evaluation and planning.

AEE 4941 Full Time Practical Work Experiences in Agricultural and Extension Education. F, W, S, SS.
Credits: 1 to 4††; Prereq: Prior arrangements with advisor, approval of Department Chairman and Dean.
Practical work must be a new experience and related to the field of study.

AEE 4942 Agricultural and Extension Education Practicum. F, W, S.
Credits: 2 to 16; Prereq: Senior standing and consent of the department chairman.
An individualized program whereby students are apprenticed to proper officials to gain practical experience in agribusiness and natural resources education, agricultural and extension programs at the County level and agribusiness experience in selected agricultural organizations.

AEE 4943 Agricultural Extension Practicum. F, W, SS.
Credits: 2 to 12; Prereq: Senior standing and consent of the Department Chairman.
An individualized program whereby students are apprenticed to proper officials to gain practical experience in the agricultural extension program at the county level.

GRADUATE COURSES

AEE 5643 Comparative Extension Education.
Credits: 4

AEE 6206 Advanced Instructional Techniques in Agricultural and Extension Education. W, SS.
Credits: 4

AEE 6300 Methodology of Planned Change in Agribusiness.
Credits: 4

AEE 6325 History and Philosophy of Agricultural Education.
Credits: 4

AEE 6417 Advanced Agricultural Leadership.
Credits: 4

AEE 6516 Program Development and Evaluation in Extension.
Credits: 4

AEE 6521 Agricultural and Extension Education Through Group Action.
Credits: 4

AEE 6523 Development Community Programs in Agriculture.
Credits: 4

AEE 6541 Developing Curricular Materials for Programs in Agriculture.
Credits: 4; Prereq: AEE 6206.

AEE 6606 Principles and Practices of Extension Education.
Credits: 4

AEE 6611 Adult Education in Agriculture.
Credits: 4

AEE 6704 Extension Administration and Supervision.
Credits: 4

AEE 6905 Problems in Agricultural and Extension Education.
Credits: 1 to 4; max. of 12.

AEE 6910 Supervised Research.
Credits: 1 to 5††

AEE 6912 Non-thesis Research in Agriculture and Extension Education.
Credits: 1 to 5

AEE 6933 Seminar in Agricultural and Extension Education.
Credits: 1

AEE 6935 Topics in Agricultural and Extension Education.
Credits: 1 to 4

AEE 6940 Supervised Teaching.
Credits: 1 to 5††

AEE 6946 Supervised Occupational Experiences In Agricultural Education.
Credits: 4

AEE 6971 Master's Research.
Credits: 1 to 9††

AGRICULTURAL ENGINEERING
College of Agriculture
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Zachariah, G.L., Chairman; Bagnall, L.O.; Baird, C.D.; Buffington, D.E.; Campbell, K.L.; Choate, R.E.; Fluck, R.C.; Hill, D.T.; Jones, J.W.; Khe, C.V.; Myers, J.M.; Nordstedt, R.A.; Overman, A.R.; Rogers, C.J.; Shaw, L.N.; Smajstrla, A.G.; Smerage, G.H.

AGE 4012 Analytical and Professional Methods for Agricultural Engineering. F.
Credits: 4
Creative and functional design methods; economic principles, management techniques and systems analysis for agricultural engineering systems; professional responsibilities of agricultural engineers.

AGE 4023 Agricultural Energetics. S.
Credits: 3
Energy and agriculture, identification and measurement of energy flows in agricultural systems, concepts and tools, relationships, evaluation of alternatives.

AGE 4112 Agricultural Tractors and Power Units. S.
Credits: 3; Prereq: EML 3100 and AGE 4012.
Functional requirement, characteristics, and design of tractive, mobile, and stationary agricultural power units.

AGE 4121 Agricultural Field Machines. W.
Credits: 5, Prereq: EGM 3400 and EGM 3520; AGE 4012.
Machines and mechanized systems for agricultural production; functional requirements, operating characteristics, and component design including mechanical and hydraulic drives.

AGE 4142 Hydraulic Power Transmission and Control Systems. W.
Credits: 3; Prereq: Engineering Classification or permission from instructor.
Transmission and control of loads with hydraulic power circuits, controls, activators, motors, and fluid-servo systems. Application or agricultural and industrial machinery.

AGE 4212 Soil and Water Conservation Engineering. W.
Credits: 4; Prereq: EGM 3803.
Basic hydrology; flow through porous media, flood routing and grade control structures for soil and water conservation.

AGE 4232 Drainage and Irrigation Engineering. S.
Credits: 4; Prereq: EGM 3803.
The design of agricultural land drainage and irrigation systems.

AGE 4312 Agricultural Structures, Processing Equipment and Operations. W.
Credits: 5; Prereq: AGE 4012 or equivalent, and EGM 3520.
Techniques, materials and tools relating to agricultural structures, their equipment and included operations.

AGE 4612 Heat and Mass Transfer in Biological Systems. F.
Credits: 4; Prereq: EML 3100; Coreq: EGM 3803.
Transfer phenomena, steady and unsteady state heat conduction, radiation, free and forced convention, mass transfer, psychometrics, thermodynamics of biological processes.

AGE 4632 Engineering Principles of Plant and Animal Environment. S.
Credits: 4; Prereq: AGE 4012 or equivalent.
Engineering principles in the environmental design or production, storage and processing facilities for plant and animal products.

AGE 4712 Animal Waste Management. F.
Credits: 5; Prereq: 4EG or consent of instructor.
Engineering analysis and design of systems for the handling, treatment, utilization and disposal of livestock and poultry wastes. Laboratory analysis of animal wastes, waste waters, receiving waters and soils used as a disposal medium.

AGE 4905 Special Problems in Agricultural Engineering. F, W, S, SS.
Credits: 1 to 6; May be repeated up to a maximum of 12 credits in the course. Prereq: Recommendation of Department Chairman. Selected problems or projects in the student's major field of engineering study.

AGE 4932 Special Topics. F, S.
Credits: 2 to 5; Prereq: permission of instructor.
Variable subject content providing for the study of agricultural engineering topics not offered in other courses. May be repeated up to a maximum of 10 credits.

AGE 4949 Co-Op Work Experience.
Credits: 1 to 5; Prereq: 4EG Classificiation; one term industrial employment, including extra work according to preapproved outline.
Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

††Grading is on a S-U basis only.

Descriptions

AGRONOMY

GRADUATE COURSES

AGE 5643 Biological and Agricultural Systems Analysis. F.
Credits: 4; Prereq MAC 3312.
Conceptual and mathematical descriptions of systems; concepts and analysis of system behavior; physiological, populational, agricultural, and environmental applications.

AGE 5646 Biological and Agricultural Systems Simulation. W.
Credits: 4; Prereq: MAC 3312, COP 3110 or 3212.
Prediction of biological and agricultural systems behavior by digital computer simulation of system mathematical models; CSMP and GASP IV languages.

AGE 6031 Instrumentation in Agricultural Engineering Research.
Credits: 4

AGE 6152 Advanced Farm Machinery.
Credits: 4

AGE 6252 Advanced Soil and Water Management Engineering.
Credits: 4

AGE 6332 Advanced Agricultural Structures.
Credits: 4

AGE 6442 Advanced Agricultural Process Engineering.
Credits: 4

AGE 6905 Non-Thesis Research in Agricultural Engineering.
Credits: 1 to 5

AGE 6910 Supervised Research.
Credits: 1 to 5††

AGE 6931 Seminar.
Credits: 1††

AGE 6933 Special Topics in Agricultural Engineering.
Credits: 1 to 6

AGE 6940 Supervised Teaching.
Credits: 1 to 5††

AGE 6971 Master's Research.
Credits: 1 to 15††

AGE 6986 Research Methods in Agricultural Engineering.
Credits: 3

AGRONOMY
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Ward, C.Y., Chairman; Allen, L.H.; Barnett, R.D.; Boote, K.H.; Brecke, B.J.; Brolmann, J.B.; Currey, W.L.; Dean, C.E.; Dudeck, A.E.; Edwardson, J.R.; Ennis, W.B., Jr.; Fritz, G.J.; Gallaher, R.N.; Garrard, L.A.; Gascho, G.J.; Gaskins, M.H.; Goddard, R.E.; Green, V.E., Jr.; Haller, W.T.; Hinson, K.; Hollis, C.A.; Horner, E.S.; Johnson, J.T.; Jones, D.W.; Kalmbacher, R.S.; Kretschmer, A.E., Jr.; leGrand, F.; McCloud, D.E.; Mislevy, P.; Mott, G.O.; Mullen, R.E.; Norden, A.J.; Ocumpaugh, W.R.; Pfahler, P.L.; Popenoe, H.L.; Prine, G.M.; Quesenberry, K.H.; Rodgers, E.G.; Ruelke, O.C.; Schank, S.C.; Schroder, V.N.; Smith, R.L; Sutton, D.L.; Teem, D.H.; West, S.H. Whitty, E.B.; Wilcox, M.

AGR 3210 Field Crop Science. F.
Credits: 4
Fundamentals of adaptation, improvement, production, and utilization of major field crops.

††Grading is on a S-U basis only.

AGR 3303 Genetics. F, W, SS.
Credits: 5, Prereq: An introductory course in Botany, Zoology, or Biological Sciences.
The science and physical basis of inheritance, genes as units of heredity and development and the qualitative and quantitative aspects of genetic variation.

AGR 4001C Man's Major Food-Crop Resources. F.
Credits: 4; Prereq: A basic course in agriculture, biological sciences, or natural resources.
World population, land resources, and agricultural ecosystems. Crop climatology, crop geography, and crop yields. Present and projected levels of food production in the developed and developing countries.

AGR 4231 Forage and Pasture Science. W, S.
Credits: 5
Scientific and technological developments in the selection, production, and utilization of forage crops, and in the development and management of grazing areas.

AGR 4242 Rice.
Credits: 5; Prereq: AGR 3210 and BOT 3503, or equivalent.
Characteristics, production practices, pest control, physiological development, processing, and utilization of world rice crop.

AGR 4244 Sugarcane.
Credits: 4; Prereq: AGR 3210 and BOT 3503.
Morphology and anatomy of sugarcane. Role of plant nutrients and cultural practices. Diagnostic techniques. Principal diseases and pests affecting yield.

AGR 4246 Oilseed Crops.
Credits: 4; Prereq: AGR 3210, BOT 3023, or equivalent.
Economically important oilseed plants, with emphasis on characteristics, production practices, physiological and biochemical development, processing, and utilization.

AGR 4248 Fiber Crops
Credits: 4; Prereq: AGR 3210, BOT 3503, or equivalent.
Characteristics, production practices, physiological development, processing, and utilization of plant fibers having commercial importance in their natural or modified form.

AGR 4321 Plant Breeding. W.
Credits: 4; Prereq: AGR 3303.
The science and technology of plant improvement.

AGR 4905 Problems in Agronomy. F, W, S, SS.
Credits: 1 to 3. Maximum 6; Prereq: Minimum of one course in Agronomy and consent of instructor.
Scientific study of individual problems in crop production, weed science, genetics, or plant breeding.

AGR 4931 Agronomy Seminar. F, S.
Credits: 1
Preparation, presentation, discussion of latest Agronomic advances. Required of all students majoring in Agronomy.

AGR 4941 Work Experience in Agronomy. F, W, S, SS.††
Credits: 1 to 4; S-U Grade only. Prereq: Prior arrangement with adviser and approval of Department Chairman and Dean.

The Agronomy Department also offers additional courses as identified below which are listed under the heading of "Plant Sciences — General" in this catalog:

PLS 2031 Fundamentals of Crop Production.
Credits: 4
(Offered jointly with the Vegetable Crops Department).

PLS 4601 Weed Science.
Credits: 4

PLS 4613 Aquatic Weed Control.
Credits: 3

PLS 4701 Field Plot Techniques.
Credits: 3

PLS 5652 Herbicide Technology.
Credits: 4

PLS 6623 Weed Ecology.
Credits: 3

GRADUATE COURSES

AGR 6233 Tropical Pasture and Forage Science. F.
Credits: 5

AGR 6249 Crop Plants in Tropical Environments.
Credits: 12

AGR 6307 Advanced Genetics. W. (Odd years).
Credits: 4

AGR 6311 Population Genetics. F. (Odd years).
Credits: 3

AGR 6323 Advanced Plant Breeding. S.
Credits: 4

AGR 6353 Cytogenetics. W.
Credits: 5

AGR 6380 Genetics Seminar. W.
Credits: 1

AGR 6390 Topics in Genetics.
Credits: 2 to 4

AGR 6422 Crop Nutrition. S.
Credits: 4

AGR 6442 Physiology of Agronomic Plants. W.
Credits: 4

AGR 6511 Crop Ecology. S.
Credits: 5

AGR 6661C Sugarcane Processing Technology. W. (Odd years).
Credits: 4

AGR 6751 Biochemistry of Herbicides. S. (Even years).
Credits: 3

AGR 6905 Agronomic Problems. F, W, S, SS.
Credits: 1 to 6.

AGR 6910 Supervised Research. F, W, S, SS.
Credits: 1 to 5††

AGR 6932 Topics in Agronomy.
Credits: 2 to 4

AGR 6933 Graduate Agronomy Seminar. F, W, S.
Credits: 1

AGR 6940 Supervised Teaching. F, W, S, SS.
Credits: 1 to 5††

AGR 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15††

AGR 7980 Doctoral Research. F, W, S, SS.
Credits: 1 to 15††

AMERICAN STUDIES
College of Arts and Sciences

MAJOR COMMITTEE 1977-78

Conroy, S.S., Chairman; Chalmers, D.M.; Foreman, R.C.; Hill, S.; Thompson, I.; Turner, E.R.; Williams, D.E.

Majors will be required to take at least fifty (50) hours of acceptable courses — half of which must be numbered 3000 or above — including the required American Studies courses AMS 2030, Introduction to American Studies, AMH 4041 Studies in American Civilization, AMH 4935 Senior Seminar in American Civilization. Majors are also required to take a sequence of courses reflecting the temporal span of American civilization. No more than twenty-four hours from the Humanities or the Social Sciences and no more than four courses from one discipline may be submitted.

The acceptable courses include ANT 2410, ANT 4451, 4433, 4442, 4304, 4153, 4312; ARH 3613, 4452, 4453; AFA 2000, AFA 4936, 4937; ECO 2620, 4622, 4143; EDF 3514, 4542; AML 2020, 2021, 3113; LIT 3321, 3342; ENG 3221, 3222, 4745; AML 4210, 4301; GEA 3270, 3223; AMH 2010, 2020, AMH 3421, 3422, 3423, 3315, 4307, 4309, 4460, 4172, 4530, 4546, 4547, AMH 4423, AMH 4402, 4403, 4444, 4041, 4935, 4579, 4578, 4110, 4130; MUH 4116, MUH 4561; PHP 3780; PHH 4703; POS 2041, 2112; PUP 2002; INR 3102, 3103; PUP 3323; POS 3413, 3122, 3173, 3606, 4603, 4604, 4624, 4003; PUP 4313; INR 4114; REL 3322, 3121, 3122, 3130, 4134, 4120; SOC 2000, 2020, 3022, 3830, 3745; MAF 4501; SOC 4831; SPC 4620. Students seeking advisement should contact Professor Stephen Conroy in Room 3350, General Purpose Building "A". Honors will be awarded to any student who earns a grade point average of 3.5 or higher in upper division and major work and completes an individual project in AMH 4935 of honors caliber.

American History

AMH 3315 American Popular Culture to 1970. W, SS.
Credits: 4
A survey of the interests and amusements of the common man in the United States from the camp meeting to the rock festival, from the tent show to the television program.

AMH 4041 Studies in American Civilization. F, W.
Credits: 4
Examination of selected periods of U.S. history using concepts and data from several related disciplines. Required for the American Studies Program. May be repeated with a change of content up to a maximum of 8 credits.

AMH 4935 Senior Seminar in American Civilization. S.
Credits: 4
A continuation of AMS 454 with emphasis on individual projects. May be repeated with a change of content up to a maximum of 8 credits.

American Studies

AMS 2030 Introduction to American Studies. F, W, S.
Credits: 4
An introduction to the problems, themes and methods of American Studies. Concepts such as national character and popular culture are examined, and unifying myths and symbols such as the frontier are used to illustrate the ways in which American civilization as a whole may be approached

AMS 4905 Individual Study. F, W, S, SS.
Credits: 1 to 5
Individual interdisciplinary projects in American Studies. May be repeated with a change of content up to a maximum of 10 credits.

ANIMAL SCIENCE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Wallace, H.D., Chairman; Ammerman, C.B.; Arrington, L.R.; Asquith, R.L.; Bazer, F.W.; Carpenter, J.W.; Combs, G.E., Jr.; Copelin, J.L.; Davis, G.K.; Feaster, J.P.; Fields, M.J.; Hargrove, D.D.; Hentges, J.F., Jr.; Koger, M.; Lieb, S.; Loggins, P.E.; Moore, J.E.; Olson, T.A.; Ott, E.A.; Palmer, A.Z.; Sharpe, D.C.; Shirley, R.L.; Wakeman, D.L.; Warnick, A.C.; West, R.L.

Animal Science

ANS 2002 The Meat We Eat. F, W, S.
Credits: 2
Only open to students not majoring in Animal Science. Consumer oriented. Meat as a food, its inspection for wholesomeness, meat grading, identification, processing, selection, preparation and serving. Preparation of economical, nutritious and palatable meals centered around meat will be emphasized.

ANS 3007 Principles of Livestock Production. F, S.
Credits: 4
The basic course for Animal Science majors. The fundamentals of breeding, feeding, management and marketing of beef cattle, swine, sheep and horses.

ANS 3079 Relationship of Form to Function in Horses. F.
Credits: 1; Prereq: ANS 3236 or ANS 4234 or consent of instructor.
Principles of conformation and anatomy affecting the performance of the horse and essentials of animal selection.

ANS 3236 Horse Production. S, SS.
Credits: 4
Basic and applied principles of Horse Production.

ANS 4234C Horse Enterprise Management. W.
Credits: 4; Prereq: ASG 3313, ASG 3403, ASG 3404, VES 3202 or permission of the instructor.
Management principles essential to the planning and operation of commercial Horse Enterprise.

ANS 4238 Horse Psychology and Training. F.
Credits: 2; Prereq: ANS 3236 or ANS 4234 or consent of instructor.
Basic principles and skills in the use of psychology and training techniques for breaking the young horse.

ANS 4244 Beef Cattle Enterprise Management. F, S.
Credits: 5; Prereq: AEB 3133, AGR 4231, ASG 3313, ASG 3403, ASG 3404 or permission of the instructor.
Application of basic scientific principles in the planning and management of all types of beef cattle enterprises.

ANS 4264 Swine Production. W, SS.
Credits: 3; Prereq: ASG 3403, ASG 3404.
Selection, feeding and management of hogs; forage crops and grazing, disease and parasite control.

ANS 4274 Sheep Production. W.
Credits: 2; Prereq: ASG 3313, ASG 3403, ASG 3404.
Sheep production and management in Florida and the United States, marketing and wool grading.

ANS 4614 Livestock and Carcass Evaluation. W, S.
Credits: 3; Prereq: ASG 3007.
Classifying, grading, and judging carcasses; grading and evaluation of feeder and slaughter animals.

ANS 4615 Meat Selection and Grading. F, W, S.
Credits: 1; Maximum 3 credits.
Fundamentals in grading and classifying carcasses and cuts of meat from beef, pork and lamb. Includes field trips to packing plants and exercises in practical grading and selection.

ANS 4634C Meats. F.
Credits: 4
Slaughtering, cutting and quality of meat as related to production programs with livestock.

ANS 4635 Meat Processing. S.
Credits: 4; Prereq: FOS 4513, and MAC 1132.
Methods used for processing and the Federal and State regulations for meat.

ANS 4941 Full-time Practical Work Experience in Animal Science. F, W, S, SS.
Credits: 1 to 4††; Prereq: Prior arrangement with adviser, approval of Department Chairman and Dean. Credit will be earned on the basis of one hour per month of employment.

GRADUATE COURSES

ANS 5446 Animal Nutrition. F, SS.
Credits: 5; Prereq: ASG 3403, ASG 3404, BCH 3023 or permission of instructor.

ANS 6288 Experimental Technics and Analytical Procedures in Meat Research.
Credits: 4

ANS 6368 Quantitative Genetics.
Credits: 5

ANS 6388 Genetics of Animal Improvement.
Credits: 4

ANS 6448 Nitrogen and Energy in Animal Nutrition.
Credits: 4

ANS 6448L Advanced Animal Nutrition Laboratory.
Credits: 3

ANS 6458 Advanced Methods in Nutrition Technology.
Credits: 4

ANS 6472 Vitamins.
Credits: 4

ANS 6472L Laboratory in Vitamins.
Credits: 2

ANS 6636 Meat Technology.
Credits: 4

ANS 6711 Equine Nutrition and Physiology.
Credits: 3

ANS 6715 Ruminant Nutrition and Digestive Physiology.
Credits: 3

ANS 6721 Non-Ruminant Metabolism.
Credits: 3

ANS 6723 Mineral Nutrition and Metabolism.
Credits: 4

ANS 6751 Physiology of Reproduction.
Credits: 5

ANS 6905 Problems in Animal Sciences.
Credits: 1 to 6

ANS 6910 Supervised Research.
Credits: 1 to 5††

ANS 6932 Topics in Animal Science.
Credits: 4

ANS 6933 Graduate Seminar in Animal Science.
Credits: 1††

ANS 6940 Supervised Teaching.
Credits: 1 to 5††

††Grading is on a S-U basis only.

Descriptions

ANIMAL SCIENCES-GENERAL

ANS 6971 Master's Research
Credits: 1 to 15††

ANS 7980 Doctoral Research.
Credits: 1 to 15††

ANIMAL SCIENCES-GENERAL
College of Agriculture

Cross Departmental Courses

Wallace, H.D., Chairman.

The three Departments of Animal, Poultry and Dairy Sciences have combined the following cross-departmental courses taught by the staff of the three Departments:

ASG 3003 Introduction to Animal Science, F, W, S, SS.
Credits: 5
Market types and classes of livestock; breeds of livestock, dairy and poultry, and the fundamentals of Animal, Dairy and Poultry Science.

ASG 3313 Principles of Animal Breeding. W, S.
Credits: 5; Prereq: AGR 3303 or ANS 3007.
The basic principles of breeding and genetics as applied to animals used for the production of food.

ASG 3403 Principles of Animal Nutrition. F, W, S, SS.
Credits: 3; Prereq: BCH 3023 or CHM 2043.
The nutrients required by animals, their functions, and the processes of their utilization.

ASG 3404 Applied Animal Nutrition. F, W, S, SS.
Credits: 2; Prereq: ASG 3403.

ASG 4334 Reproduction in Farm Animals. W, SS.
Credits: 4; Prereq: VES 3202 or permission of instructor.
Principles of reproduction in avian and mamallian farm animals including factors related to the estrous cycle pregnancy, semen-production, artificial insemination, pregnancy diagnosis and environmental factors affecting reproduction.

ASG 4931 Seminar. F, W, S, SS.
Credits: 1; Prereq: Senior classification.
Preparation and presentation of papers on an approved subject of major interest.

ASG 4992 Livestock, Dairy and Poultry Judging. F, W, S.
Credits: 1. Maximum 3 credits. Prereq: ASG 3003 or ANS 3007.
Special Training in livestock and dairy judging and classification; judging poultry and poultry products.

GRADUATE COURSES

ASG 5221 Animal Production in the Tropics. F.
Credits: 4; Prereq: ASN 4244, ASN 4264, DAS 3211 or permission of instructor.

ANTHROPOLOGY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Eddy, E.M., Acting Chairperson; Burns, A.F.; Carter, W.E.; Dougherty, M.; Doughty, P.L.; du Toit, B.M.; Fairbanks, C.H.; Hansen, A.; Hardman-de-Bautista, M.J.; Kimball, S.T.; Kramer, S.; Lawless, R.; Lieberman, L.S.; Maples, W.R.; Margolis, M.L.; Markel, N.N.; Milanich, J.T.; Moore, G.A., Jr.; Nunez, T.A., Jr.; Oliver-Smith, A.; Purdy, B.A.; Rice, P.M.; Spring, A.; Taylor, C.E.; von Mering, O.O.; Wagley, C.W.; Wilkerson, S.J.K.; Wing, E.S.

An undergraduate departmental major must have a minimum of 36 quarter hours, including ANT 2410, ANT 2402, ANT 3511, and ANT 3020. All undergraduates desiring a major in Anthropology should contact the department academic adviser soon after enrollment in the University. To be admitted to the major, a student must normally have a 2.5 overall and a 3.0 social science grade point average.

††Grading is on a S-U basis only.

DEPARTMENTAL HONORS

Departmental honors may be earned by students in the department who have at least a 3.0 GPA in their upper division courses, and 3.5 GPA in Anthropology courses, who, with the permission of the faculty undergraduate honors adviser, elect to take an advanced seminar, in a topical area of their choice. In a subsequent quarter the student must register for three hours of APY 499 (Departmental Major Honors). Under the direction of his honors adviser the student will write an honors essay on a topic suggested by the previous advanced course. The undergraduate honors adviser is appointed each year by the department chairman from the faculty.

Anthropology

ANT 2402 Anthropology and Modern Life. F, S.
Credits: 5
The anthropological perspective, theories, methods, applied to contemporary circumstances. The individual and the group, social groups, institutions, world view, cross-cultural perspectives, cultural transformations.

ANT 2410 Cultural Anthropology. F, W, S, SS.
Credits: 5
The nature of culture. The content of cultures; languages, subsistence, economic structures, art and religion in human societies. The integration of culture.

ANT 3141 Prehistory of Man. F, W, S, SS.
Credits: 5
Description of the archeological evidence for the evolution of man's culture from the earliest beginning to the dawn of recorded history. Analyzes causes of cultural development in the Old and New Worlds.

ANT 3241 Anthropology of Religion. S.
Credits: 5
Cross cultural survey of beliefs and practices dealing with the supernatural, magic, and religion. Conceptualization of the supernatural. Sacred specialists, their function and social position. Theories of comparative religion in the light of anthropological data.

ANT 3302 Sex roles: A cross-cultural perspective F.
Credits: 4; Prereq: ANT 2402, ANT 2410 or SOC 2000.
Anthropological perspective on division of labor by sex in different world societies. Variation in sex roles in economic, religious, political domains. Socialization and life cycle.

ANT 3511 Physical Anthropology. F, W, S.
Credits: 5
The evolution of man and the formation of races. Relationship with other primates. Human genetics. Anthropometry. Racial differences, distribution and history. Laboratories in human and non-human primate anatomy and physiology.

ANT 3620 Introduction to Language and Culture. F, S.
Credits: 5
Principles of linguistics, nature and origin of languages, linguistic analysis, linguistic and other fields, language and culture.

ANT 4035 Anthropological Theory. F.
Credits: 5; Prereq: 6 hours in Anthropology, including ANT 2402 or ANT 2410.
The history and development of anthropological theory. Methods in anthropological research. Directed reading of major theoretical publications.

ANT 4036 Current Anthropological Theory. W.
Credits: 5; Prereq: ANT 2402 or ANT 2410 or permission of instructor.
Reading and discussion of current trends in anthropological literature. Emphasis on problems of research. Directed reading in major current publications.

ANT 4124 Field Sessions in Archeology. S.
Credits: 8; Prereq: 8 hours of anthropology, including ANT 3141
Excavation and archeological sites, recording of data, laboratory handling and analysis of specimens, and study of the theoretical principles which underlie field methods and artifact analysis.

ANT 4153 North American Archeology. F.
Credits: 5
The existing archeological materials relating to prehistoric North American cultures. The origins of the North American Indian. Historic Indian and colonial materials.

ANT 4158 Prehistoric Peoples of Florida. W.
Credits: 5; Prereq: ANT 2402 or ANT 2410.
Archeological evidence for the evolution of Indian cultures from 10,000 B.C. to historic period with emphasis on descriptions of regional cultures after 500 B.C. Cultural ecology of different environmental regions, archeological materials, external relationships to Southeast and Circum-Caribbean area.

ANT 4185 Principles of Archeology. S.
Credits: 5; Prereq: 8 hours of anthropology, including ANT 3141.
The viewpoint and methods of archeology, especially as applied to New World materials. The archeological survey. Methods and techniques of excavation. Systems of chronological analysis.

ANT 4255 Peasant Society and Culture. S.
Credits: 5; Prereq: ANT 2402, ANT 2410, or permission of instructor.
A comparative and historical study of peasantry. Unique characteristics, institutions, and problems of peasant life, stressing especially rural-urban relationships and emphasizing European and Latin American peasant populations.

ANT 4274 Political Anthropology. W.
Credits: 4; Prereq: ANT 2402 or ANT 2410, or POS 2001 or POS 2002, or permission of the instructor.
The problem of identifying political behavior. Natural leadership in bands, tribes, and small groups. Acephalous societies and republican structures. Kingship and early despotic states. Theories of bureaucracy.

ANT 4304 Urban Ethnography. S.
Credits: 4; Prereq: 2410.
Problems of rural-urban migration. Crosscultural, interdisciplinary approach to the non-western city. Comparative ecology of cities.

ANT 4312 The North American Indian. S.
Credits: 5
The peopling of North America and Early Man in the New World. The culture areas of North America. Unique characteristic, institutions, and problems of the peoples.

ANT 4326 Native Peoples of Mexico, Central America. S.
Credits: 4
The settlement and early cultures of the area with an emphasis on the rise of the major culture centers. The impact of European civilization and surviving Indians.

ANT 4332 Contemporary Peoples of Latin America. F.
Credits: 5; Prereq: ANT 2402, ANT 2410, or ANT 4404.
An introduction to Latin American peoples. Native culture areas and high civilizations. Metropolitan Hispanic culture and cultural syncretism in selected and geographically varied

nation-states, selected urban and peasant subcultures.

ANT 4352 Africa: Traditional Peoples and Cultures. F.
Credits: 4
An anthropological survey of the culture history and ethnographic background of the peoples of Africa. A basis for appreciation of current problems of acculturation, nationalism, and cultural survival and change among African peoples.

ANT 4403 Environment and Cultural Behavior. S.
Credits: 4; Prereq: ANT 2410.
The interaction of people and their environment as mediated by cultural institutions. Levels of socio-economic adaptation in hunting and gathering, pastoral, and agricultural societies. Warfare and ritual as ecological mechanisms.

ANT 4404 The Nature of Culture. SS.
Credits: 5
An advanced level introduction to theoretical Anthropology. The problems of universal functions. Pattern, structure and process. Models and cultural laws. Illustrative material from current enthnology. Recommended for majors.

ANT 4426 Social Organization. F.
Credits: 5; Prereq: ANT 2402 or ANT 2410.
Property concepts, forms and complexes. Tribal patterns of government and social control.

ANT 4433 Culture and Personality. F.
Credits: 5; Prereq: ANT 2402 or ANT 2410 or senior standing.
The relationship between culture and personality. Benedict's, Malinowski's, and Mead's contributions, contemporary schools of thought up to and including studies of national character. Methods in culture and personality research.

ANT 4442 Introduction to Urban Anthropology. F.
Credits: 4; Prereq: ANT 2410.
A re-examination of basic concepts, models and theories dealing with the nature of the city. The approach is cross-cultural and interdisciplinary.

ANT 4451 Racial and Cultural Minorities. W.
Credits: 5
A survey of racial and cultural minority group contacts, inter-group relations, conflicts, the nature of prejudice, and the problems of minority groups in the contemporary world. Examples will be taken from North and South America, Africa, and India.

ANT 4476 Cultural Revitalization. W.
Credits: 5
Study and analysis of the background, structure, and aim of cultural movements described as messianic, Nativistic, cargo, etc.

ANT 4525 Human Osteology and Osteometry. F.
Credits: 5; Prereq: ANT 3511 and consent of instructor.
Human skeletal identification for the physical anthropologist and archeologist. Techniques for estimating age at death, race, and sex from human skeletal remains. The measurement of the human skeleton for comparative purposes.

ANT 4552 Primate Behavior. S.
Credits: 5; Prereq: ANT 3511 and permission of instructor.
Behavior and social organization of various nonhuman primates. Relationships to human cultural behavior.

ANT 4555 Introduction to Primatology. W.
Credits: 5; Prereq: ANT 3511.
The adaptive aspects of the physical features of man, apes, monkeys, and the prosimians. A review of the taxonomy of primates.

ANT 4586 Human Evolution. S.
Credits: 4; Prereq: ANT 3511 and consent of instructor.
The data, methods, and theoretical problems found in human evolution.

ANT 4905 Individual Work.
Credits: 1 to 5; Prereq: Consent of instructor. May be repeated to a maximum of 10 hours.

ANT 4907 Research Projects in Social, Cultural and Applied Anthropology.
Credits: 1 to 5; Prereq: Consent of instructor. May be repeated with change of content up to a maximum of 10 credits.
For students undertaking directed research in supplement of regular course work or on special problems.

ANT 4914 Departmental Honors in Anthropology. F, W, S.
Credits: 3; Prereq: Consent of Undergraduate adviser.
Open to students meeting departmental honors criteria and normally taken in the Senior year. Students will develop special interests and write an essay based upon this research.

ANT 4930 Special Topics in Anthropology.
Credits: 3 to 5; Prereq: Instructor's permission or 10 credits of work in Anthropology.
Rotating topics. With permission, may be repeated as topics change. Maximum of 10 credits. credits.

GRADUATE COURSES

ANT 5165 Introduction to Mesoamerican Prehistory.
Credits: 4

ANT 5195 Zooarchaeology.
Credits: 4

ANT 5246 Ritual and Symbolic Systems.
Credits: 5

ANT 5266 Economic Anthropology.
Credits: 5

ANT 5336 The Peoples of Brazil.
Credits: 4

ANT 5337 Peoples of the Andes.
Credits: 4

ANT 5338 The Tribal Peoples of Lowland South America.
Credits: 4

ANT 5346 Caribbean Culture Patterns.
Credits: 4

ANT 5354 The Anthropology of Modern Africa.
Credits: 4

ANT 5366 Peoples and Cultures of Southeast Asia.
Credits: 4

ANT 5376 Regional Cultures of Oceania.
Credits: 4

ANT 5423 Kinship and Descent.
Credits: 4

ANT 5466 Folk Medicine.
Credits: 4

ANT 5467 Culture and Nutrition.
Credits: 5

ANT 5477 Human Organization and Change.
Credits: 5

ANT 5479 Cultural Dynamics.
Credits: 4

ANT 5485 Methodological Foundation for Anthropology.
Credits: 4

ANT 5486 Quantitative Methods for Anthropology.
Credits: 4

ANT 5507 Bio-Behavioral Perspectives on Human Character Structure.
Credits: 5

ANT 5528 Anthropological Genetics.
Credits: 4

ANT 5546 Seminar: Biological Basis of Social Behavior. F.
Credits: 4

ANT 5621 Principles of Anthropological Linguistics.
Credits: 5

ANT 5622 Phonology.
Credits: 5

ANT 5623 Laboratory Work in Anthropological Linguistics.
Credits: 1 to 5. Maximum 15 credits.

ANT 5624 Introduction to Linguistic Field Methods.
Credits: 5

ANT 5625 Language and Culture.
Credits: 5

ANT 5626 Nonverbal Communication.
Credits: 5

ANT 5717 The Culture of Planned Social Systems.
Credits: 4

ANT 6038 Seminar in Anthropological History and Theory.
Credits: 4

ANT 6186 Seminar in Archeology.
Credits: 5

ANT 6188 Advanced Archeological Field Methods.
Credits: 9

ANT 6276 Principles of Political Anthropology.
Credits: 5

ANT 6286 Seminar in Ethnology.
Credits: 5

ANT 6356 People and Culture in Southern Africa.
Credits: 5

ANT 6387 Seminar on the Anthropology of Latin America.
Credits: 5

ANT 6388 Ethnographic Field Methods.
Credits: 5

ANT 6408 Principles of Cultural Anthropology.
Credits: 5

ANT 6428 Culture and Community.
Credits: 5

ANT 6429 Cultural Pluralism.
Credits: 4

ANT 6434 Psychological Anthropology.
Credits: 5

ANT 6445 African Urbanization.
Credits: 5

ANT 6447 Seminar in Structure and Process in the Urban Environment.
Credits: 5

Descriptions

ARCHITECTURE

ANT 6478 Comparative Structure and Process of Natural Groups.
Credits: 5

ANT 6487 Evolution of Culture.
Credits: 5

ANT 6489 Pattern, Structure and Process.
Credits: 5

ANT 6547 Human Adaptation.
Credits: 5

ANT 6588 Seminar in Physical Anthropology.
Credits: 5

ANT 6627 Seminar in Linguistic Field Methods.
Credits: 5

ANT 6628 Seminar in Language and Culture.
Credits: 5

ANT 6707 Seminar on Applied Anthropology.
Credits: 5

ANT 6716 Problems of National Integration in Latin America.
Credits: 5

ANT 6718 Directed Culture Change in Latin America.
Credits: 5

ANT 6725 Culture and Learning.
Credits: 5

ANT 6728 Anthropology and Education.
Credits: 5

ANT 6735 Seminar in Cross-Cultural Epidemiology.
Credits: 5

ANT 6737 Medical Anthropology.
Credits: 5

ANT 6905 Individual Work.
Credits: 1 to 5. Maximum 15 credits.

ANT 6910 Supervised Research.
Credits: 1 to 5††

ANT 6915 Research Projects in Social, Cultural and Applied Anthropology.
Credits: 1 to 5

ANT 6917 The Profession of Anthropology.
Credits: 2

ANT 6933 Special Topics in Anthropology.
Credits: 5. Maximum 15 credits.

ANT 6940 Supervised Teaching.
Credits: 1 to 5††

ANT 6945 Internship in Applied Anthropology.
Credits: 1 to 12. Maximum 12 credits.††

ANT 6971 Master's Research.
Credits: 1 to 15††

ANT 7980 Doctoral Research.
Credits: 1 to 15††

††Grading is on a S-U basis only.

Zoology

GRADUATE COURSES

ZOO 6126 Historical Ecology of the Pleistocene.
Credits 4

ARCHITECTURE
College of Architecture

INSTRUCTIONAL STAFF 1977-78

Butt, A.F., Chairman; Crain, E.E.; Dasta, A.J.; Davis, A.J.; Fearney, E.M.; Foster, M.T.; Haase, R.W.; Hamacher, B.H.; Hawkinson, L.J.; Jaroszewicz, M.T.; Kemp, H.W.; Kinzey, B.Y.; Lisle, F.F., Jr.; McRae, J.M.; Merritt, H.C., Jr.; Morgan, C.F.; Morse, R.H.; Prugh, P.E.; Reeves, F.B.; Ridgdill, G.; Sanders, L.W.; Scheffer, G.; Shaw, L.G.; Solis, M.M.; Stoeckel, J.E.; Tillman, W.J.; Voichysonk, B.F.; Wiedegreen, E.A.; Winarsky, I.H.; Wisley, P.P.

ARC 1115C Basic Drawing. F, W, S, SS.
Credits: 4
Exercises to develop the student's skills in perception and freehand drawing.

ARC 1126C Architectural Drawing 1. F, W, S, SS.
Credits: 4
Exercises in instrumental drawing with architectural emphasis and perspective construction.

ARC 1131C Architectural Communications. F, W, S, SS.
Credits: 4; Prereq: ARC 1115, ARC 1126
A survey of multi-media communication techniques for developing explanatory vocabulary, both verbal and visual. Process-oriented exercises in the graphic simulation of spaces.

ARC 1211 The Building Arts. F, W.
Credits: 3
A survey of the building arts, with emphasis on the social and physical factors that influence them.

ARC 2311C Architectural Design 1. F, W.
Credits: 4; Prereq: ARC 1131
Basic studies in perception of the components of architecture.

ARC 2313C Architectural Design 2. W, S.
Credits: 4; Prereq: ARC 2311
Basic studies in perception of the components of architecture. Continuation ARC 2311.

ARC 2461 Materials and Methods of Construction 1. F, S.
Credits: 4; Prereq: ARC 1126 and ARC 2311
Basic construction terminology; evaluation and selection of building materials in accordance with their functions.

ARC 2580 Architectural Structures 1. W, S.
Credits: 4; Prereq: MAC 2223, PHY 2004, 2005.
A vocabulary course to prepare the student for making structural decisions in architecture and to begin to develop a structural sense important to architectural solutions.

ARC 3291C Special Studies in Architecture. F, W, S, SS.
Credits: 2 to 4; Prereq: Completion of lower division program in Architecture, or equivalent, and recommendation of advisor.
Special studies in Architecture adjusted to individual needs of undergraduate students. Student may repeat for a maximum of 8 credits.

ARC 3381C Architectural Design 3. F, S.
Credits: 6, Prereq: ARC 2313 Coreq: ARC 3681.
Studies in developing basic architectural space.

ARC 3382C Architectural Design 4. F, W.
Credits: 6; Prereq: ARC 3381.
Problem solving in architecture emphasizing site planning in the context of Architectural Design.

ARC 3383C Architectural Design 5. W, S.
Credits: 6; Prereq: ARC 3382
Problem solving of architectural design emphasizing creative analysis of various components, both as isolated elements and as they relate to the entire scope of design.

ARC 3463C Materials and Methods of Construction 2. W, S.
Credits: 4; Prereq: ARC 2461
Building codes and construction decisions; relating of building materials to each other in construction sub-assemblies.

ARC 3551C Architectural Structures 3. W. F.
Credits: 4; Prereq: ARC 3581.
Continuity in Architectural Structures, elements of Reinforced Concrete and prestressed concrete design in Architecture.

ARC 3581C Architectural Structures 2. F, S.
Credits: 4; Prereq. ARC 2580
Elements of wood and steel systems in Architectural Structures.

ARC 3631C Environmental Technology 2. F, W.
Credits: 4; Prereq: PHY 2004, 2005.
Principles and practices relating to the control of the thermal and atmospheric environment in buildings.

ARC 3681C Environmental Technology 1. F, S.
Credits: 4; Prereq: PHY 2004, 2005. Coreq: ARC 3381.
Fundamentals of architectural lighting and acoustics.

ARC 3711 Survey of Architectural History 1. F, W.
Credits: 4
A general survey of social, political, and cultural factors which have generated art and architecture of the following civilizations: Egyptian, Mesopotamian, Greek, Roman, Early Christian, Romanesque, and Gothic.

ARC 4274 Professional Administration, Specifications and Estimating. W, S.
Credits: 4; Prereq: ARC 4474, 4463.
The ethical, legal and administrative responsibilities of the architect. Techniques of practice and architectural services, including specification writing and determination of economic feasibility.

ARC 4384C Architectural Design 6. F, S.
Credits: 6; Prereq: ARC 3383.
Problem solving in architectural design emphasizing analysis of various components, both as isolated elements and as they relate to the entire scope of creative design.

ARC 4385C Architectural Design 7. F, W.
Credits: 6; Prereq: ARC 4384.
Application of the architectural design process to the assemblage and detailing of a small-scale building.

ARC 4386C Architectural Design 8. W, S.
Credits: 6; Prereq: ARC 4385.
Problem solving in architecture emphasizing synthesis of design elements into complete systems of environment.

ARC 4464C Materials and Methods of Construction 3. F, W.
Credits: 4; Prereq: ARC 3462, 3631, and 3551.
Continuation of ARC 3462 with emphasis on the large scale decisions in building construction and relationships to structural and equipment systems, and other aspects of total building design.

ARC 4561C Architectural Structures 4. F, S.
Credits: 4; Prereq: ARC 3551.
Selected problems in structural systems in architecture.

ARC 4682C Environmental Technology 3. F, S.
Credits: 4; Prereq: PHY 2004, 2005.
Principals and practices of sanitation, power, communication and transportation in buildings.

ARC 4731 Survey of Architectural History 2. F, S.
Credits: 4; Prereq: ARC 3711.
Continuation of a general survey of social, political, and cultural factors which have generated art and architecture of the Renaissance and Baroque periods.

ARC 4741 Survey of Architectural History 3. W, S.
Credits: 4; Prereq: ARC 4731.
Continuation of the general survey of social, political, and cultural factors which have generated art and architecture of the 19th and 20th centuries.

GRADUATE COURSES

ARC 5535 Architectural Structures - Advanced Studies
Credits: 5

ARC 5641 Architectural Acoustics
Credits: 4

ARC 5791 Problems in Architectural History
Credits: 4

ARC 5792 Studies in Architectural Theory.
Credits: 4

ARC 5800 Survey of Architectural Preservation, Restoration, and Reconstruction
Credits: 4

ARC 5810 Techniques of Architectural Documentation
Credits: 4

ARC 5890 Historic Preservation and Restoration: Interiors
Credits: 4

ARC 5891 Historic Preservation and Restoration: Landscape Architecture
Credits: 4

ARC 6241C Professional Core 1
Credits: 9

ARC 6242C Professional Core 2
Credits: 9

ARC 6265 Terminal Project
Credits: 1 to 15

ARC 6275 Professional Core 3
Credits: 2

ARC 6345C Architectural Design 1
Credits: 5

ARC 6346C Architectural Design 2
Credits: 5

ARC 6347C Architectural Design 3
Credits: 5

ARC 6355C Architectural Design 4
Credits: 8

ARC 6356C Architectural Design 5
Credits: 8

ARC 6521 Advanced Architectural Structures 7
Credits: 4

ARC 6541 Advanced Architectural Structures 1
Credits: 4

ARC 6552 Advanced Architectural Structures 2
Credits: 4

ARC 6555 Advanced Architectural Structures 3
Credits: 6

ARC 6565 Advanced Architectural Structures 4
Credits: 4

ARC 6566 Advanced Architectural Structures 5
Credits: 6

ARC 6571 Advanced Architectural Structures 6
Credits: 4

ARC 6591 Advanced Architectural Structures 8
Credits: 4

ARC 6592 Advanced Architectural Structures 9
Credits: 4

ARC 6632 Environmental Systems Design Laboratory 3
Credits: 4

ARC 6633 Environmental Systems Design 3
Credits: 4

ARC 6642 Environmental Systems Design Laboratory 1
Credits: 4

ARC 6643 Environmental Systems Design 1
Credits: 4

ARC 6651 Environmental Systems Design Laboratory 4
Credits: 4

ARC 6652 Environmental Systems Design 4
Credits: 4

ARC 6684 Environmental Systems Design Laboratory 2
Credits: 4

ARC 6685 Environmental Systems Design 2
Credits: 4

ARC 6691 Environmental Systems Design Laboratory 5
Credits: 4

ARC 6692 Environmental Systems Design Laboratory 6
Credits: 4

ARC 6713 Architectural History 1
Credits: 5

ARC 6735 Architectural History 2
Credits: 5

ARCH 6742 Architectural History 3
Credits: 5

ARC 6750 Architectural History: American 1
Credits: 4

ARC 6751 Architectural History: American 2
Credits: 4

ARC 6761 Architectural History: Area Concentration
Credits: 5; 15 Max.

ARC 6771 Architectural History: Literature and Criticism
Credits: 5; 15 Max.

ARC 6793 Architectural History: Regional
Credits: 4

ARC 6851 Technology of Restoration: Materials and Methods 1
Credits: 4

ARC 6852 Technology of Restoration: Materials and Methods 2
Credits: 4

ARC 6853 Technology of Restoration: Problems and Processes
Credits: 4

ARC 6854C Technology of Preservation: Programming and Design 1
Credits: 4

ARC 6855C Technology of Preservation: Programming and Design 2
Credits: 4

ARC 6860 Techniques of Preservation: Legal and Economic Processes
Credits: 4

ARC 6910 Supervised Research
Credits: 1 to 5††

ARC 6911 Architectural Research 1
Credits: 1 to 9

ARC 6912 Architectural Research 2
Credits: 1 to 9

ARC 6913 Architectural Research 3
Credits: 1 to 9

ARC 6940 Supervised Teaching
Credits: 1 to 5††

ARC 6971 Master's Research
Credits: 1 to 15††

ART
College of Fine Arts

INSTRUCTIONAL STAFF 1977-78

Grissom, E.E., Chairman; Craven, R.C.; Holbrook, H.H.; Isaacson, M.J.; Kerslake, K.A.; Kremgold, D.A.; Naylor, J.G.; Nichelson, J.C.; O'Connor, J.A.; O'Connor, M.A.; Pelliza, S.M.; Pinnell, V.P.; Ruiz, N.C.; Skelley, R.C.; Streetman, E.; Uelsmann; J.N.; Walton, S.S.; Ward, J.L.; Ward, P.A.; Williams, H.D.; Yurgilas, K.L.

Art

ART 1201C Beginning Design 1. F, S, SS.
Credits: 3
Fundamental principles of visual organization. Emphasis upon two-dimensional design in black and white. Students who intend to major in art should schedule ART 1201 and 1300 concurrently.

ART 1203C Beginning Design 2. W, SS.
Credits: 3; Prereq: ART 1201C.
Continuation of ART 1201C.
Emphasis upon design in three dimensions. Projects in construction, modeling and carving in a variety of materials.

††Grading is on a S-U basis only.

Descriptions

ART

ART 1300C Beginning Drawing 1. F, S, SS.
Credits. 3
Drawing as a means of formal organization. Exploration of the drawing media through stillife, figure and landscape.

ART 1301C Beginning Drawing 2. W, SS.
Credits: 3; Prereq ART 1300C.
Continuation of ART 1300C.
Emphasis upon spatial description — use of the figure.

ART 2001C Studio for Non-Majors. F, W, S, SS.
Credits: 2; No prerequisites.
An introductory studio course for the non-profession student who does not intend to major in art. Emphasis upon creative expression rather than technical proficiency. Not available for credit toward a major in art. This course may be repeated with change in content up to a maximum of 4 credits. This course may be taken on the S-U option.

ART 2205C Intermediate Design. F, W, S, SS.
Credits. 3; Prereq: ART 1201C-1203C.
Continuation of ART 1201C-1203C.
Emphasis upon color theory, and upon the use of color in design.

ART 2302C Intermediate Drawing and Painting. F, W, S, SS.
Credits: 3; Prereq: ART 1301C-2205C.
Continuation of ART 1300C-1301C.
Pictorial form. Relationship of subject to pictorial form and content. Paintings in various media.

ART 3110C Ceramics 1. F, W, S, SS.
Credits· 4; Prereq: ART 1201C-1203C.
Basic concepts of ceramic design. Experience in processes of forming, decorating, glazing and firing pottery.

ART 3111C Ceramics 2. F, W, S, SS.
Credits: 4; Prereq: ART 3111C.
Continuation of ART 3111C.

ART 3150C Jewelry and Metalwork, 1. F.
Credits: 4; Prereq: ART 1203C-2110C.
Basic processes in jewelry and metalwork. Work in silver, copper, and other materials. Enameling on metal.

ART 3151C Jewelry and Metalwork, 2. W.
Credits: 4; Prereq: ART 3150C.
Emphasis upon craftsmanship. Advanced techniques in metalwork and enameling.

ART 3158C Jewelry and Metalwork, 3. S.
Credits: 4; Prereq: ART 3150C-3151C.
Continuation of ART 3151C.

ART 3233C Layout 1. F.
Credits: 4; Prereq: 1201C-2205C. Recommended, ART 2280C.
Fundamental principles of visual communication and of design in printed material.

ART 3234C Layout, 2. W.
Credits: 4; Prereq: ART 3233C.
Continuation of ART 3233C.

ART 3235C Graphic Design. S.
Credits: 4; Prereq: ART 3233C-3234C-3282C.
Principles of advertising design with emphasis upon development of visual ideas and necessary skills and techniques for their presentation.

ART 3280C Lettering. F, W, S, SS.
Credits: 4, Prereq: ART 1201C-2205C.
Principles of design and use of letter forms. Study of historic designs and styles. Development of skills and execution.

ART 3282C Typographical Design. W.
Credits: 4; Prereq: ART 3233C.
Study of the nomenclature, basic principles and mechancis of typography as an element of graphic communication. Practical exercises in layout and preparation of type for the printed page.

ART 3310C Intermediate Drawing, 1. F, S.
Credits: 4. Prereq: ART 1301C-2302C.
The function of drawing in art. Pictorial concepts motivated by study of the human figure. Problems of draftsmanship and form.

ART 3311C Intermediate Drawing 2. W, SS.
Credits: 4; Prereq: ART 3310C.
Continuation of ART 3310C.

ART 3400C Printmaking, 1. F, W, S, SS.
Credits: 4; Prereq: ART 3310C.
Basic procedure and processes in printmaking. Formal and expressive characteristics of the print media.

ART 3401C Printmaking, 2 F, W, S, SS.
Credits: 4; Prereq: ART 3400C.
A continuation of ART 3400C.

ART 3510C Painting 1. F, W, S, SS.
Credits: 4; Prereq: ART 2302C.
The oil medium. Technical and creative problems. Continued emphasis upon pictorial organization.

ART 3520C Painting, 2. F, W, S, SS.
Credits: 4; Prereq: ART 3510C.
Work in one or more of the painting media: oil, watercolor, casein, lacquer, tempra, etc.

ART 3600C Photography, 1. F, W, S, SS.
Credits: 4; Prereq: ART 1201C.
Fundamentals of photography. Operation of camera. Developing, printing, enlarging. Principles of design in photography.

ART 3601C Photography, 2. F, W, S, SS.
Credits: 4; Prereq: ART 3600C.
Continuation of ART 3600C.

ART 3605C Photo-Print Processes 1. F, W, S, SS.
Credits: 4; Prereq: ART 3600C-3400C.
Studies in the conversion of the photographic image into a form suitable for the printmaking processes. Processes will include: photo screen printing, photo-etching and photo-lithography.

ART 3606C Photo-Print Processes 2. F, W, S, SS.
Credits: 4; Prereq: ART 3605C.
Continuation of ART 3605C. May be repeated with change of content.

ART 3701C Sculpture 1. F, W, S, SS.
Credits: 4; Prereq: ART 1203C.
Problems in sculptural form and composition. Work in plaster, clay, metal and other materials.

ART 3702C Sculpture, 2. F, W, S, SS.
Credits: 4; Prereq: ART 3701C.
Continuation of ART 3701C. Emphasis upon sculpture in metal. Introduction to carving.

ART 3830C Methods and Materials of the Artist. S, SS.
Credits: 4; Prereq: ART 2302C.
The physical properties of the artist's materials and the history of their use. Traditional experimental materials and techniques.

ART 4113C Advanced Ceramics. F, W, S, SS.
Credits: 5; Prereq: ART 3112C.
Contemporary ceramic design and execution. Advanced technical and creative problems. This course may be repeated for credit.

ART 4237C Advanced Graphic Design. F.
Credits: 5; Prereq: ART 3235C.
Continuation of ART 3235C. Planning of advertising campaigns. Emphasis upon concise visual thinking and upon speed and quality of execution.

ART 4239C Projects in Graphic Design; 1. W.
Credits: 5; Prereq: ART 4237C.
Projects in design and execution of page advertisement and direct-mail brochures. Poster design and package design.

ART 4241C Projects in Graphic Design, 2. S.
Credits: 5; Prereq: ART 4239C.
Design and execution of comprehensive advertising campaign.

ART 4312C Advanced Drawing. F, W, S, SS.
Credits: 5; Prereq: ART 3310C-3311C.
Emphasis upon the drawing as a terminal creative expression rather than as a preliminary study. This course may be repeated for credit.

ART 4402C Advanced Printmaking. F, W, S, SS.
Credits: 5; Prereq: ART 3401C.
Advanced problems in creative printmaking. This course may be repeated for credit.

ART 4531C Advanced Painting. F, W, S, SS.
Credits: 5; Prereq: ART 3520C.
Emphasis upon individual creative expression. This course may be repeated for credit.

ART 4604C Advanced Photography. F, W, S, SS.
Credits: 5; Prereq: ART 3601C.
Use of the camera as a medium of individual creative expression. Experimental projects in black and white and color photography. This course may be repeated for credit.

ART 4703C Advanced Sculpture. F, W, S, SS.
Credits: 5; Prereq: ART 3702C.
Advanced problems in sculptural form with further development of processes and techniques. This course may be repeated for credit.

ART 4905C Individual Study. F, W, S, SS.
Credits: 5; Prereq: A major in art and permission of the department head.
This course may be repeated for credit.

GRADUATE COURSES

ART 5905C Individual Study. F, W, S, SS.
Credits: 4 to 6; Prereq: A major in art and permission of the departmental head.
This course may be repeated for credit.

ART 6340C Advanced Drawing. F, W, S, SS.
Credits: 4; Prereq: ART 4312C.

ART 6835C Research in the Methods and Materials of the Artist. F, W, S, SS.
Credits: 1 to 5††

ART 6910C Supervised Research. F, W, S, SS.
Credits: 1 to 5††

ART 6927C Advanced Study. F, W, S, SS.
Credits: 4 or 6

ART 6940 Supervised Teaching. F, W, S, SS.
Credits: 1 to 5††

ART 6971C Master's Reserach. F, W, S, SS.
Credits: 1 to 15††

ART 6973C Individual Project. F, W, S, SS.
Credits: 1 to 15††

Art History

ARH 2050 Introduction to the Principles and History of Art 1. F, SS.
Credits: 3
Principles of art. Relation of styles to cultural context. Ancient and Medieval art and architecture.

ARH 2051 Introduction to the Principles and History of Art 2. W.
Credits: 3; ARH 2050.
Continuation of ARH 2050. Art and architecture through the late Medieval period through Rococo.

††Grading is on a S-U basis only.

ARH 2052 Introduction to the Principles and History of Art 3. S.
Credits: 3; Prereq: ARH 2050-2051.
Continuation of ARH 2050-2051. 19th and 20th century art to the present day. The visual arts in contemporary society.

ARH 3130 Greek Art. F.
Credits: 4; Prereq: ARH 2050-2051-2052.
The art and architecture of ancient Crete and Greece.

ARH 3171 Roman and Early Christian Art. W.
Credits: 4; Prereq: ARH 2050-3130.
The art and architecture of the Italian peninsula. Etruscan through the Roman Empire — early Christian and Byzantine art.

ARH 3200 Medieval Art. S.
Credits: 4; Prereq: ARH 2050-2051-3171.
The art and architecture of Europe and the Mediterranean region from approximately the fourth to the fourteenth centuries A.D.

ARH 3510 Arts of Africa and Oceania. W, S.
Credits: 4; Prereq: ARH 2050-2051-2052.
An introduction to the visual arts of Africa and Oceania. The focus of the course will be on either area. The course may be repeated with a change of content.

ARH 3520 Arts of Black Africa. S.
Credits: 4; Prereq: ARH 2050-2051-2052.
Survey of traditional visual arts of Black Africa offered in three separate courses: (1) Arts of Western Sudan and Guinea Coast; (2) Arts of the Niger Delta, Equatorial Forest and related zones; (3) Arts of Southern Savanna and Southern and Eastern African fringe. This course may be repeated with change of content and may be taken for graduate credit under ARH 5905.

ARH 3530 Oriental Art. W, SS.
Credits: 4; Prereq: ARH 2050-2051-2052.
The visual arts in Oriental civilizations. This course may be repeated with change of content.

ARH 3541 The Art of India. 1. S.
Credits: 4; Prereq: ARH 2050-2051-2052.
A survey of the development of sculpture and architecture in India from the Indus Valley epoch through the Medieval period.

ARH 3542 The Art of India II. S.
Credits: 4; Prereq: ARH 2050-2051-2052.
A survey of the development of painting in India from ancient times up to the comtemporary period.

ARH 3605 American Indian Art. S.
Credits: 4; Prereq: ARH 2050-2051-2052.
A survey of the visual arts of the Amerindians north of Mexico from the prehistoric era to the present.

ARH 3613 American Art. SS.
Credits: 4; Prereq: ARH 2050-2051-2052.
Painting and sculpture in the United States from the middle of the 18th century through 1913.

ARH 3614 Introduction to Afro-American Art. S.
Credits: 4; Prereq: ARH 2050-2051-2052.
This course will include Afro-American art from Latin America and the Caribbean as well as from the United States. Emphasis will be on the social context of the art and artists under consideration. May be taken for graduate credit under ARH 5905.

ARH 3650 Latin American Art. W, SS.
Credits: 4; Prereq: ARH 2050-2051-2052.
A survey of pre-Columbian art in Mexico, Central America and South America.

ARH 3800 Criticism of Art. W.
Credits: 4; Prereq: ARH 2050-2051-2052.
Review of principle theories in the history of criticism. Analysis and evaluation of work of art. Problems in the criticism of contemporary art.

ARH 4310 Early Renaissance Art in Italy. F.
Credits: 4; Prereq: ARH 2050-2051-3171-3200.
Italian art and architecture of the 14th century. Emphasis upon painting and sculpture.

ARH 4311 Renaissance Art in Italy. W.
Credits: 4; Prereq: ARH 2050-2051-4310.
Continuation of ARH 4310. Italian art and architecture of the 15th century. Emphasis upon painting and sculpture.

ARH 4312 Later Renaissance Art in Italy. S.
Credits: 4; Prereq: ARH 2050-2051-4311.
Continuation of ARH 4311. Italian art and architecture of the 16th century. Emphasis upon painting and sculpture.

ARH 4331 Renaissance Art in Northern Europe. F.
Credits: 4; Prereq: ARH 2050-2051.
Sources and development of late 14th and 15th century art outside Italy. Emphasis upon painting and sculpture.

ARH 4332 Later Renaissance Art in Northern Europe. W.
Credits: 4; Prereq: ARH 2050-2051-4331.
Continuation of ARH 4331. 16th century European art outside Italy. Emphasis upon painting and sculpture.

ARH 4350 Baroque Art in Europe. S.
Credits: 4; Prereq: ARH 2050-2051-4332.
Continuation of ARH 4312-4332. European art and architecture in the 17th and 18th centuries. Emphasis upon painting and sculpture.

ARH 4431 Nineteenth Century Art. F.
Credits: 4; Prereq: ARH 2050-2051-2052-4350.
Continuation of ARH 4350. European art and architecture in the nineteenth century. Emphasis upon painting and sculpture. Neo-Classicism, Romanticism, Realism.

ARH 4432 Late Nineteenth Century Art. W.
Credits: 4; Prereq: ARH 2050-2051-2052-4431.
Continuation of ARH 4431. European art and architecture from approximately 1875 to 1913.

ARH 4452 Early Twentieth Century Art. S.
Credits: 4; Prereq: ARH 2050-2051-2052-4432.
Continuation of ARH 4432. European and American art of the twentieth century prior to 1940.

ARH 4453 Mid-Twentieth Century Art. F, S, SS.
Credits: 4; Prereq: ARH 4452.
Continuation of ARH 4452. American and international art from 1945 to present.

ARH 4495 Senior Seminar. F, S, SS.
Credits: 4; Prereq: Senior standing and a major in art.
Study and discussion of selected topics of current interest and significance in the visual arts.

ARH 4905 Individual Study. F, W, S, SS.
Credits: 5; Prereq: A major in art and permission of the department head.
This course may be repeated for credit.

ARH 4935 Honors Seminar in Art. F, W, S, SS.
Credits: 4; Prereq: ARH 4495 or equivalent, senior standing and a major in art.
Intensive study by the seminar method of a limited topic in the field of art. This course may be repeated with change in content.

GRADUATE COURSES

ARH 5805 Methods of Research and Bibliography. F.
Credits: 4; Prereq: ARH 3800 or its equivalent.

ARH 5905 Individual Study. F, W, S, SS.
Credits: 4 to 6; Prereq: A major in art and permission of the departmental head.
This course may be repeated for credit.

ARH 6791 Research in the Methods and Materials of the Artist. F, W, S, SS.
Credits: 1 to 5††

ARH 6897 Seminar: Problems in the History, Theory and Criticism of Art I. W.
Credits. 4

ARH 6898 Seminar: Problems in the History, Theory and Criticism of Art II. S.
Credits: 4

ARH 6899 Seminar: Problems in the History, Theory and Criticism of Art III. SS.
Credits: 4

ARH 6910 Supervised Research. F, W, S, SS.
Credits: 1 to 5††

ARH 6913 Supervised Research. F, W, S, SS.
Credits: 1 to 5††

ARH 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15

ARTS AND SCIENCES
College of Arts and Sciences

General and Cross-Departmental Courses

Afro-American Studies

AFA 2000 Introduction to Afro-American Studies. F, W, SS.
Credits: 4
An integrative interdisciplinary exploration serving to introduce the student to selected themes in the study of the contemporary Afro-American experience, emphasizing continuity and change in cultures and societies of people of African origin.

AFA 4936 Afro-American Studies Senior Integrative Seminar 1. F, S.
Credits: 4; Prereq: Senior standing and permission of the adviser of the Afro-American Studies certificate program.
An intensive examination of the bibliographic material and an analysis of theory, method, and special problems in the field of Afro-American studies. The relevance of different disciplines to the study of common problems will be explored.

AFA 4937 Afro-American Studies Senior Integrative Seminar 2. W, SS.
Credits: 4; Prereq: AFA 4936 and permission of the adviser of the Afro-American Studies certificate program.
A research seminar which will include a month long conference at which scholars from diverse fields will explore in common topics of interdisciplinary interest.

African Studies

AFS 2002 The African Experience—An Introduction to African Studies. F, W, S.
Credits: 4
An introductory interdisciplinary study of African society and culture that examines the richness, diversity, and time-depth of African civilizations.

AFS 4935 African Studies Interdisciplinary Seminar. W.
Credits: 3; Prereq: Upper-division standing or approval of instructor.
A research seminar on a selected interdisciplinary theme. May be repeated for credit when course theme is different up to a maximum of 9 credits.

Computer Concepts

COC 4400 Man and the Computer. F, S.
Credits: 4; Prereq: Senior standing.

††Grading is on a S-U basis only.

The impact of computers and information science on man and the structure of society.

Engineering: General

ENG 4834 Humanistic Issues in Engineering. S.
Credits: 4
Studies in the relation of the humanities to engineering and applied science.

European Studies

EUS 4935 Western European Senior Seminar. W.
Credits: 3. Prereq: Senior standing and permission of adviser of Western European Studies Program.

Health Care Administration

HSC 1005 Introduction to Medicine and Dentistry. F. S.
Credits: 1††
The role of Medicine and Dentistry in today's society; preprofessional preparation; professional school admission standards and criteria, medical practice and professional ethics. Designed to provide insight into the nature of the medical profession, skills required in its practice and the opportunities for careers following graduation from professional school.

HCA 4102 Humanistic Issues in Health Care: Nursing, Health-Related Professions, and Pharmacy. W.
Credits: 4
Students are selected by pre-professional advisors for participation in the program. Studies in the significance of values, humanities constructs and methods of inquiry as related to crises, problems, and decisions found in allied health fields. Course will focus on the physician-patient relationship.

HCA 4410L Humanistic Issues in Health Care: Medicine. F, S.
Credits: 4
Students are selected by pre-medical advisors for participation in the program. Studies in the significance of values, humanities constructs and methods of inquiry as related to crises, problems, and decisions found in contemporary medical care. Course will focus on the physician-patient relationship.

Humanities

HUM 4563 Law Humanities: The Metaphors of Culture. F.
Credits: 4
Students are selected by their advisors for participation in the program. Studies in the relationships between law and language.

HUM 4564 Humanities and Law: Constitution and Culture. W.
Credits: 4
Students are selected by pre-law advisors for participation in the program. Studies in the relation of law to history, society, and human values. The course will attempt to define law as a manifestation of human cultures and basic values.

Interdisciplinary Studies

IDS 1120 Introduction to the Legal Profession. F, S.
Credits: 1††
The role of law in today's society; prelaw preparation; law school admission standards and criteria; law practice and the legal profession. Designed to provide insight into the nature of the legal profession, the skills required in the practice of law, and the opportunities for careers following graduation from law school.

††Grading is on a S-U basis only.

IDS 1920 Frontiers of the Mind. F, S.
Credits 2††
Designed to expose entering Freshman to the most gifted and renowned teacher-scholars in the various colleges.

IDS 2180 Responsible Alternatives to Alcohol Abuse. F, W, S.
Credits. 2
This course examines alcoholism in its social, psychiatric, cultural, physiological, and chemical dimensions, through a variety of academic and off-campus lectures, and 20-student discussion groups. A major course paper or project is required.

IDS 3181 Social Ethics. F, W, S.
Credits: 4
A critical introduction designed to develop one's capacity to think clearly and intelligently about ethical issues that arise in relation to such social institutions and professions as government, business, medicine, engineering, and law. Readings will be both theoretical and applied. Invited national speakers.

IDS 4159 The Fabulous Artificer. F.
Credits: 4
Varying images of engineers and scientists.

IDS 4162 Humanities and Business Administration. F.
Credits: 4
Inquiries into moral and ethical problems in business.

IDS 4163 Selling as a Way of Life. F.
Credits: 4
An examination of certain fundamental humanistic aspects of the business profession.

IDS 4182 Ethical Issues in Medicine. F, S.
Credits: 4
A critical introduction designed to develop the student's capacity to think clearly and intelligently about contemporary ethical issues in medicine; e.g., abortion, euthanasia, human experimentation, allocation of scarce resources and biomedical engineering.

IDS 4183 Ethical Issues in Law. W.
Credits: 4
A critical introduction designed to develop the student's capacity to think clearly and intelligently about contemporary ethical issues in law; e.g., the legal enforcement of morality, the separation of law and morality, civil disobedience, bargaining, punishment and responsibility.

IDS 4940 Practicum. F, W, S, SS.
Credits: 1 to 4
Permission of departmental representative or program required. Supervision experience in a local, county, state, or federal agency. Supervision by a faculty member or delegated authority and a post-practicum written report is required.

IDS 4905 Individual Study. F, W, S, SS.
Credits: 2 to 10
For select undergraduates undertaking indepth college approved courses of study. The project, as part of the student's planned program, must be approved by the Dean and carried out under the guidance of a faculty member.

IDS 4906 Interdisciplinary Thesis Research. F, W, S, SS.
Credits: 1 to 10. Coreq: Acceptance into Interdisciplinary Major Program and approval of Director.

IDS 4925 Interdisciplinary Workshop in Social Issues. F, W, S, SS.
Credits: 1 to 5
For each quarter, the content of this course will be recommended by the chairpersons of the Divisions of the College and approved by the Curriculum Committee. May be repeated for a maximum of 15 credits with change of topic.

IDS 4938 High Honors Seminar. F, W, S, SS.
Credits: 4; Open to selected candidates for any baccalaureate degree with High Honors in the College of Arts and Sciences. Prereq: Permission of the High Honors Committee.
Described in the Arts and Sciences section of this catalog. May be repeated for additional credit, up to a maximum of 12 credits.

Women's Studies

WST 3010 Interdisciplinary Perspectives on Women. F, S.
Credits: 4
An in-depth , topical approach to the study of women, with a concentration in three to four disciplines. This will serve as a required course for a Women's Studies Certificate. Independent, but supervised, study a possible option, after careful screening.

GRADUATE COURSES
Oceanography: Marine Technology

OMT 6631 Scientist in the Sea. S.
Credits: 12

Speech Education

SED 6943 Internship in College Teaching.
Credits: 3, 6, or multiples of three, up to required total of 9.

ASIAN STUDIES
College of Arts and Sciences

MAJOR COMMITTEE 1977-78

McCune, S., Chairman (Geography); Chang, R.T. (History); Chu, C.C. (Chinese); Clubok, A.B., (Political Science); Craven, R.C. (Art); Creel, A.B. (Religion); Funk, A.L. (History); Johnson, I. (Humanities); Lawless, R. (Anthropology); Thursby, G.R. (Religion); Toda, Y. (Economics).

The Asian Studies degree program offers a major for students whose interest in Asia pertains to cultural and regional studies rather than to a single discipline or department. The major consists of 40 quarter hours from designated courses, with a concentration of 28 hours in either East Asia or South Asia, and the remaining 12 hours in the other area and/or in General Asia courses. The program must include at least one interdisciplinary seminar. In addition to the major, attention is directed to the Basic Distribution and Language Requirements of the College of Arts and Sciences. The fulfilling of the foreign language proficiency for students in the Asian Studies program will be worked out in consultation with the faculty advisor, taking into account the student's educational, professional and personal goals. The University offers basic courses in Chinese and Japanese.

Asian Studies Courses

General Asia: HUM 2410; ASN 2001; CPO 3034, ASN 4935.

East Asia: ARH 3530, CHI 3500; ECS 4203; GEA 3753; ASH 3403, 3302, 3303, 4441, 4442; CPO 3513; REL 3330, 3331, 4333.

South Asia: ARH 3541, 3542; ASH 3521, 3550; REL 3340, 3341, 3342, 4390, 4347, 4346.

Individual Study and Special Topics courses dealing with Asia may also be utilized for major credit, as approved by the faculty adviser.

Honors will be awarded to any student who completes the Asian Studies interdisciplinary major program, earns a grade point average of 3.5 or higher in his or her upper division work, earns a grade point average of 3.5 or higher in the major

work, and is recommended by the Director of the Asian Studies Program and the course instructor as having completed in ASN 4935 an individual project which is of honors caliber and which reflects the interdisciplinary nature of the Asian Studies Program.

Asian Studies

ASN 2001 Asia and Its People. W, S.
Credits: 5
An introductory study of Asia, with special attention to selected current problems as reflected in life-situations in Asian countries.

ASN 4935 Asian Studies Senior Seminar. S.
Credits: 5; Prereq: Senior status in Asian studies or permission of the instructor.
An integrative approach designed to enable a student to bring together various facets of previous study in relation to particular topics and problems. Required of all majors in the Asian Studies Interdisciplinary Program; open to other advanced students with permission of the instructor.

Humanities

HUM 2410 Asian Humanities. F, W, S.
Credits: 5
A general education course similar in philosophy and purpose to HUM 2210-2230-2250. Contents selected from the philosophies, literature, arts and music of India, China and Japan.

ASTRONOMY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Carr, T.D., Chairman; Carr, T.D.; Chen, K-Y.; Cohen, H.L.; Donivan, F.F.; Eoff, K.M.; Green, A.E.S.; Gottesman, S.T.; Lebo, G.R.; Oliver, J.P.; Olsson, C.N.; Omer, G.C.; Roberts, L.H.; Smith, A.G.; Wood, F.B.

Astronomy is a unit of the joint Department of Physics and Astronomy, which offers graduate degrees in astronomy at the M.S. and Ph.D. levels (see the Graduate Catalog). Because modern astronomy is almost entirely astrophysical in nature, students interested in careers in astronomy are advised to take a B.S. degree in physics with an admixture of 3000- to 5000-level astronomy courses. With such a background a student is well prepared to undertake, at this or other institutions, the graduate training that is essential for a professional career. Students desiring counseling on courses or careers in astronomy should consult the Chairman for Astronomy, Room 231, Space Sciences Research Building.

Astronomy

AST 1002 Descriptive Astronomy. F, W, S, SS.
Credits: 4
An elementary survey of the astronomical universe, primarily for those not majoring in physical science or mathematics.

AST 1022L Astronomy Laboratory. F, W, S, SS.
Credits: 1; Coreq. or Prereq: AST 1002.
Observational work: this plus AST 1002 satisfies the requirement for a laboratory science.

AST 2003 Survey of Solar System Astronomy. W. S.
Credits: 4
An elementary survey emphasizing astronomy of the solar system. The course is designed for those not majoring in physical science or mathematics. Includes observational work and satisfies the requirement for a laboratory science.

AST 2004C Survey of Stellar Astronomy. S, SS.
Credits: 4
An elementary survey emphasizing stellar, galactic and extragalactic astronomy. The course is designed for those not majoring in physical science or mathematics. Includes observational work and satisfies the requirement for a laboratory science.

AST 3015C General Astronomy 1. F.
Credits: 5; Prereq: Calculus and one year of college physics.
First part of the sequence AST 3015-3016. A survey of the astronomical universe, primarily for majors in physical science, engineering, or mathematics. Includes observational work and satisfies the requirement for a laboratory science.

AST 3016C General Astronomy 2. W.
Credits: 5; Prereq: AST 3015.
Second part of the sequence AST 3015-3016.

AST 3034 Frontiers in Astronomy. F, W, S, SS.
Credits: 3; Prereq: AST 1002 or AST 2004C.
Intended for non-science majors who have had an introductory course in Astronomy, this course will present an in-depth look at selected topics of current interest. The content will vary with the desires of the students and instructor. No background in physics or mathematics required.

AST 3082C Basic Astronomy for Teachers. SS.
Credits: 4; Prereq: One year of high-school algebra.
Lectures, demonstrations, and observing sessions covering selected topics in solar system and stellar astronomy.

AST 3652 Celestial Navigation. W.
Credits: 4; Prereq: MAC 1132.
Determination of position at sea and guidance of marine vessels. Charts, the compass, dead reckoning, piloting, navigational instruments and nautical astronomy with emphasis on fundamentals of celestial navigation.

AST 3653 Celestial and Air Navigation. S.
Credits: 4; Prereq: MAC 1132.
Covers the guidance fundamentals of aircraft. Aeronautical charts, visual flight planning and procedures, relative movement, radio, navigational astronomy; time and sight reduction.

AST 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5; Prereq: AST 3015-3016 or two years of college physics, plus consent of instructor.
Assigned reading or research for qualified undergraduates. May be repeated with change of content.

GRADUATE COURSES

Astronomy — Instrumentation

ASI 6105 Astronomical Techniques 1.
Credits: 3

ASI 6106 Astronomical Techniques 2.
Credits: 3

ASI 6115 Astronomical Techniques 3.
Credits: 3

ASI 6116 Astronomical Techniques 4.
Credits: 3

ASI 6205 Radio Astronomy 1.
Credits: 3

ASI 6206 Radio Astronomy 2.
Credits: 3

ASI 6207 Radio Astronomy 3.
Credits: 3

Astronomy

AST 5043 History of Astronomy. W.
Credits: 3

AST 5113 Solar System Astrophysics 1. W.
Credits: 3

AST 5114 Solar System Astrophysics 2. S.
Credits: 3

AST 5600 Introductory Positional Astronomy.
Credits: 3

AST 6165 Radiopropagation and Ionospheric Physics 1.
Credits: 3

AST 6166 Radiopropagation and Ionospheric Physics 2.
Credits: 3

AST 6167 Physics of the Earth's Upper Atmosphere.
Credits: 3

AST 6168 Physics of Planetary Atmospheres.
Credits: 3

AST 6169 Atomic Physics of Planetary Atmospheres.
Credits: 3

AST 6214 Stellar Astrophysics 1.
Credits: 3

AST 6215 Stellar Astrophysics 2.
Credits: 3

AST 6216 Stellar Astrophysics 3.
Credits: 3

AST 6265 Variable Stars
Credits: 3

AST 6275 Visual and Spectroscopic Binary Stars 1.
Credits: 3

AST 6276 Visual and Spectroscopic Binary Stars 2.
Credits: 3

AST 6277 Eclipsing Binary Stars 1.
Credits: 3

AST 6278 Eclipsing Binary Stars 2.
Credits: 3

AST 6306 Galactic Structure.
Credits: 3

AST 6406 Extragalactic Astronomy and Cosmology.
Credits: 3

AST 6506 Celestial Mechanics 1.
Credits: 3

AST 6507 Celestial Mechanics 2.
Credits: 3

AST 6606 Positional Astronomy 1.
Credits: 3

AST 6607 Positional Astronomy 2.
Credits: 3

AST 6905 Individual Work.
Credits: 1 to 5.

AST 6910 Supervised Research.
Credits: 1 to 5††

AST 6935 Seminar in Modern Astronomy.
Credits: 1††

AST 6940 Supervised Teaching.
Credits: 1 to 5††

AST 6971 Master's Research.
Credits: 1 to 15††

††Grading is on a S-U basis only.

Descriptions

ATMOSPHERIC SCIENCES

AST 7157 The Giant Planets.
Credits: 3

AST 7279 Close Binary Stars.
Credits: 3

AST 7939 Special Topics.
Credits: 3

AST 7980 Doctoral Research.
Credits 1 to 15††

Physics—Specialized

PHS 6606 Special Relativity.
Credits: 3

PHS 6616 General Relativity.
Credits: 3

ATMOSPHERIC SCIENCES
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Green, A.E.S., Chairman; Chameides, W.L.; Garrison, L.M.; Hedinger, R.A.; Henry, J.A.; Peterson, L.R.; Singh, V.; Spinhirne, J.; Ward, G.D.

Meteorology

MET 1010 Introduction to Weather and Climate. F, W, S, SS.
Credits: 3; Prereq: None.
A course designed for non-science students interested in understanding the phenomena of daily weather on the stage set by the climate.

MET 1010L Laboratory for Meteorology 1010. F, S, SS.
Credits: 1; Coreq: MET 1010.

MET 2503L Laboratory for Meteorology and Atmospheric Physics 2701. F, W, S.
Credits: 1; Coreq: MET 2701.

MET 2701 Elementary Meteorology and Atmospheric Physics. F, W, S.
Credits: 3
The phenomena of weather and climate, of the upper atmosphere and man's involvements with the lower atmosphere; for students with a physics or chemistry background.

MET 3100 Dynamic Meteorology. W, SS.
Credits: 3; Prereq: None.
Collection and use of climatic data; simple and complex climatic elements; climate history, trends, and fluctuations; climate activities and environment.

MET 3160L Laboratory for Meteorology and Micrometeorology 3711. W, SS.
Credits: 1; Coreq: MET 3711, Prereq: PHY 2040.

MET 3711 Introduction to Meteorology and Micrometeorology. W, SS.
Credits: 3; Prereq: PHY 2040.
The interaction of the earth and atmosphere within the first hundred feet of the ground. The local radiation balance, and temporal and spatial distribution of solar radiation at the surface. The effects of small-scale circulation patterns on plant growth. Effects of local turbulence and convection.

MET 4401 Passive Remote Sensing. W.
Credits: 3; Prereq: MAP 3302.
Recent developments in remote sensing by passive optical techniques (infrared to ultraviolet) are discussed both from the point of view of instrumentation and of the properties or phenomena which are measured. Introduction to remote sensing for persons concerned with the atmosphere and with earth resources (e.g., forestry, geology, urban studies, etc.)

††Grading is on a S-U basis only.

MET 4402 Remote Sensing of the Atmosphere (Active). S.
Credits: 3; Prereq: PHY 3123.
Recent developments in remote sensing of the atmosphere by active radio, optics, and acoustic techniques. Emphasis on micro-meteorological problems rather than the usual areas of meteorological concern.

MET 4460 Introduction to Aeronomy. W.
Credits: 3; Prereq: MAP 3302.
Evolution, general properties and models of the atmosphere of Earth and other planets. A basic description of the physics of solar-terrestrial relationships, chemical processes and large and small scale motions of the atmosphere.

MET 4905 Individual Work. F, W, S, SS.
Credits: 3 to 5
Qualified undergraduate students may study selected topics in aeronomy and atmospheric sciences. May be repeated with change of content up to 15 credits.

BEHAVIORAL STUDIES

INSTRUCTIONAL STAFF 1976-77

Bell-Nathaniel, A.M., Acting Chairperson; Bock, E.H.; Christian, M.B.; Damico, S.; Davis, B.H.; Fregly, M.S.; Hansen, A.; Kosch, S.; Morgan, J.I.; Parker, M.; Pitts, J.H.; Resnick, J.L.; Schmidt, P.L.; Schwartz, J.M.; Sciadini, F.; Skovholt, T.M.; Spring, A.; Standley, G.B.; Sullivan, E.S.; Tucker, C.M.; Wolfson, M.

The Department of Behavioral Studies develops and offers interdisciplinary courses primarily of topical nature designed to introduce students to principles from the behavioral sciences and to help them develop skills in applying this knowledge in understanding topics of contemporary significance. The Department seeks to 1) introduce students to fundamental issues in the area of human behavior and develop an awareness of the issues' complexity. 2) Develop interest in and an appreciation of the potential of the behavioral sciences as disciplines making significant contributions which foster individual and social development, and in resolving individual and social conflicts. 3) Foster an open, questioning attitude towards their own and others' beliefs and behaviors. 4) Promote the development of analytic abilities and encourages their use in obtaining and evaluating information and reaching decisions based on such an approach.

African Studies

AFS 2002 The African Experience — An Introdution to African Studies. F, W, S.
Credits: 4
An introductory interdisciplinary study of African society and culture that examines the richness, diversity, and time-depth of African civilizations.

Behavioral Studies

BES 1310 Issues in Human Behavior. F, W, S.
Credits: 2
Interdisciplinary investigation of selected topics in human behavior focusing on current problems and issues which affect the individual. Content will be drawn from appropriate behavior and social science disciplines as determined by the topic. Courses will be at the freshman and sophomore level. May be repeated with change of topic.

BES 2930 Behavioral Studies: Special Topics. F, W, S, SS.
Credits: 1 to 5
Courses designed to develop an understanding of how principles from the behavioral sciences can be used to describe, evaluate and explain selected topics of significance in contemporary society. Students will be introduced to principles from Sociology, Psychology, Anthropology, Speech, etc. May be repeated with change of topic. Up to a maximum of 8 credits.

BES 2121 Creative and Critical Thinking. F, W, S, SS.
Credits: 3
Procedures of inquiry. Inductive reasoning: hypotheses, generalizations and causal theories, together with the influences of human needs, defense mechanisms, emotion, bias and the personal point of view of these procedures.

BES 2132 Decision Making. F, W, S, SS.
Credits: 3
Decision making. Principles of deductive reasoning, with special attention to decisions involving value premises. Common fallacies in reasoning and devices of persuasion.

BES 2291, 2391, 2491 Behavioral Studies: College Honors.
Credits: 4 each
Content consistent with the goals of BES 2121-2132, structured for the abilities of students in the College Honors program.

BES 2351 Power and Violence. F, W, S, SS.
Credits: 4
Utilizing perspectives from a range of academic fields (Sociology, Psychology, History, Literature) the course will examine questions concerning the biological, psychological, social and cultural causes of violence with a focus on the American scene. A lecture series including outside speakers, movies, documentaries, and/or field trips is planned to provide different perspectives on the issues of power and violence and to aid students gain insights into their social surroundings and personal experiences.

BES 2411 Cybernetics and Society. F, W, S, SS.
Credits: 4
The effects of technology on our political, economic, and social institutions. Particular emphasis is placed on value changes and effects on human behavior created by the mass introduction of computers and scientific advances. The student develops understanding of cybernetics as a means of controlling entropy. Guest lecturers provide insights into problems and benefits of current technology. Three discussion sessions per week are based on outside readings and textbook.

BES 2430 Simulated Society. F, S.
Credits: 4
The course attempts, through the development of a contrived political, social economic and behavioral community to provide students with a perspective for understanding the causes of social problems and conflict, and an appreciation of the factors and forces which are involved in reducing these problems.

BES 3141 The Individual and the Religious Experiences. W, S.
Credits: 4
An investigation of religious practices and their meaning from the point of view of the individual, the social and personal benefits of tolerance the equally legitimate, realms.

BES 3241 Advanced Topics in Human Sexuality. F, W, S.
Credits: 4
The impact of social changes in human sexual behavior with particular emphasis on bisocial and psychocultural factors which influence the individual.

Marriage and the Family

MAF 2402 Human Sexuality and Society. F, W, S, SS.
Credits: 4
An investigation of the role of sex in contemporary society including sex roles, sex in the media, and sexual ethics. Past myths, misconceptions and customs will be reviewed along with present data from on-going research.

BIOCHEMISTRY AND MOLECULAR BIOLOGY
College of Arts and Science

INSTRUCTIONAL STAFF 1977-78

Cerutti, P.A., Chairman; Allen, Jr., C.M.; Boyce, R.P.; Chun, P.W.; Cohen, R.J.; Dunn, B.M.; Feldherr, C.M.†; Fisher, W.R.†; Fried, M.; Laipis, P.J.; Mans, R.J.; McGuire, P.M.; Noonan, K.D.; O'Brien, T.W.; Remsen, R.F.; Roberts, R.M.; Silverman, D.N.†; Stein, G.S.; Stein, J.†; Stevens, A.R.†

†Courtesy Appointments

Undergraduate Coordinator: R.J. Mans

The department offers a full program of courses for the undergraduate student preparing for professional school and advanced degrees in the biological, agricultural and life sciences. BCH 3613 is an introductory course designed to acquaint the student with the important role biochemistry plays in the life sciences with particular emphasis on the human aspects.

BCH 4313, 4203, and PCB 4535 are designed to provide the student with the comprehensive information needed to undertake advanced studies in more specialized areas. BCH 4905 and BCH 5055L complement these lecture courses by providing the option of a laboratory experience for those students who are interested in experimental approaches to biochemistry.

Students with an interest in biochemistry and a strong background in chemistry and biology courses may elect to undertake an Interdisciplinary Major in Biochemistry and Chemistry or Botany or Zoology or Microbiology and Cell Science. Interdisciplinary majors are required to enroll in BCH 4905 for at least 3 quarters.

The seminar, PCB 4930 is part of the Junior Honors Medical Program which permits early entry into medical school.

For those planning graduate work in the Department, the undergraduate major should preferably be in chemistry or biological sciences. It is recommended that as many as possible of the following courses be taken: BCH 3613, BCH 4313, BCH 4203, BCH 5055L, BCH 4905, PCB 4535, quantitative, organic and physical chemistry, calculus, physics, genetics, physiology, microbiology and German.

Biochemistry

BCH 3613 Introduction to Human Molecular Biology. S.
Credits: 3; Prereq: ZOO 2011, APB 2153 or equivalent; CHM 2043 or equivalent.
Introduction to molecular biology of normal and abnormal human systems for students in the Life Sciences. Relationship of biochemistry to advances in medical sciences, organization of human cells, cell duplication and mutability of the human genome, nutrition and metabolic diseases, viral diseases, and cell growth and proliferation (cancer, aging).

BCH 4203 Introduction to Intermediary Metabolism. W.
Credits: 5; Prereq: BCH 4313.
The second half of BCH 4313-4203. An introduction to intermediary metabolism. Topics will include a survey of biosynthetic and degradative pathways of carbohydrate, lipids, amino acids, in addition to photosynthesis, energy conservation and metabolic control.

BCH 4313 Introduction to Physical Biochemistry. F.
Credits: 5; Prereq: Organic Chemistry.
The first half of BCH 4313-4203. An introduction to physical biochemistry. Topics will include a survey of structure, chemistry, and function of nucleic acids, amino acids, and proteins, enzyme kinetics, and regulation.

BCH 4905 Biochemistry Senior Research. F, W, S, SS.
Credits: 5; Prereq: CHM 3210-3211 or equivalent. Senior standing and consent of instructor.
Laboratory or literature investigations of biochemical problems of current interest. May be repeated with change of content up to a maximum of 20 credits.

Process Biology

PCB 4535 Biochemical Genetics. S.
Credits: 4; Prereq: BCH 4313 or BCH 4203 and PCB 3060 or AGR 3303.
Topics include classic and contemporary experiments illustrative of the main aspects of DNA replication, function and chromosomal organization; DNA synthesis; RNA synthesis, processing and regulation; specific protein synthesis as expressions of genetic information in: bacteria - phage, mammalian cells - virus, developing and differentiating tissues and genetically characterized plants.

PCB 4930 Cell Biology Seminar. F.
Credits: 7.
Cellular functions in health and disease. The structure and molecular biology of the mammalian cell are stressed, including such things as virus-cell interactions, inborn errors of metabolism and bacterial growth. Enrollment restricted to students accepted into the Basic Biological and Medical Sciences Program.

GRADUATE COURSES

Biochemistry

BCH 5055L Biochemistry Laboratory. W.
Credits: 2

BCH 5878 Current Trends in Biochemistry. F.
Credits: 2

BCH 5879 Current Trends in Biochemistry. W.
Credits: 2

BCH 6065 Biochemical Structure and Function.
Credits: 4

BCH 6156C Research Methods in Biochemistry.
Credits: 2 to 6

BCH 6206 Metabolism
Credits: 4

BCH 6296 Bioenergetics and Enzyme Mechanisms.
Credits: 4

BCH 6415 Principles of Molecular Biology and Genetics.
Credits: 4

BCH 6746 Physical Biochemistry.
Credits: 4

BCH 6876 Recent Advances in Biochemistry.
Credits: 2

BCH 6910 Supervised Research
Credits: 1 to 5††

BCH 6936 Biochemistry Seminar
Credits: 1††

BCH 6937 Special Topics in Biochemistry.
Credits: 2

BCH 6940 Supervised Teaching
Credits: 1 to 5††

BCH 6971 Master's Research.
Credits: 1 to 15††

BCH 7077 Molecular Biology 3.
Credits: 4

BCH 7257 Molecular Biology 2.
Credits: 4

BCH 7627 Biochemistry of Disease.
Credits: 3

BCH 7727 Molecular Biology 1.
Credits: 4

BCH 7980 Doctoral Research.
Credits: 1 to 15††

THE BIOLOGICAL SCIENCES
University College

INSTRUCTIONAL STAFF 1977-78

Emmel, T.C., Director, Division of Biological Sciences; Drummond, B.A., Course Coordinator; Staff from Departments of Botany, Zoology and Entomology.

The program in Biological Sciences forms an integral part of the student's total experience in general education. An appreciation of the principles governing the living world is a necessary part of the background of any educated person. The three quarters of APB 2150-2151-2152, will satisfy the general education requirements for admission to or graduation from other colleges in the University. Students normally take the Biological Sciences courses in the above sequence but may restructure where necessary.

Applied Biology

APB 2150 The Biological Sciences — Genetics and Evolution. F, W, S, SS.
Credits: 3
Probably the most far-reaching biological concept is that of evolution. Mechanisms directing the evolution of organisms are studied in depth, with particular attention begin given to heredity. Emphasis is on genetics and the evolution of mankind.

APB 2150L Laboratory in Biological Sciences. F, W, S.
Credits: 1; Coreq. or prereq: APB 2152 or its equivalent.
A laboratory designed to acquaint the student with selected biological principles. It is available to those students who wish to gain experience in a non-professionally oriented laboratory, or for those needing laboratory experience to satisfy requirements for graduation.

APB 2151 The Biological Sciences-Ecology and Behavior. F, W, S, SS.
Credits: 3
This course stresses the principles of ecology, the study of relationships of organisms to their environments, and examines the biological basis of behavior. Particular emphasis is placed on the impact of man's activities on our environment.

APB 2152 The Biological Sciences-Cell and Organism Biology. F, W, S. SS.
Credits: 3
The relationship between structure and function is explored at the cellular and organismal level. Modern concepts of physiology are stressed and emphasis is placed on the function of the human body.

APB 2991-2992-2993 The Biological Sciences: College Honors.
Credits: 3 each
Content consistent with the goals of APB 2150-2151-2152 and structured to the abilities of qualified students.

††Grading is on a S-U basis only.

Descriptions

Introductory Biology

BSC 2930 The Biological Sciences: Special Topics. S.
Credits: 4. Prereq: One Quarter of Biological Sciences or equivalent.
Topics and problems for individual and small group investigation; techniques of research, documentation, reports, critiques. Particularly relevant topics may form the nucleus for concentration during any one quarter and the subject may change with change of instructor or quarter. Admission is by permission of the coordinator.

Special Services Courses

APB 2994-2995-2996 The Biological Sciences.
Credits. 4 each
Content consistent with the goals of APB 2150-2151-2152 and structured to the abilities of qualified students. Admission by invitation only.

BIOLOGICAL SCIENCES— GENERAL BIOLOGY CORE SEQUENCE
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Emmel, T.C., Director, Division of Biological Sciences: Nordlie, F.G., Core Coordinator; Staff from the Departments of Biochemistry, Botany, Microbiology and Cell Science and Zoology.

The new Core Biological Sciences Sequence is intended for pre-professional students intending to enter the Health Sciences, Food and Agricultural Sciences as well as the Departments of Biochemistry, Botany, Microbiology and Cell Science and Zoology.

Introductory Biology

BSC 2010C Organismic Biology. F, W, SS.
Credits: 4.
Whole organism biology. Diversity of living forms, growth and development, physiology and reproduction.

BSC 2011C Molecules and Cells. W, S.
Credits: 4; Prereq: BSC 2010C and CHM 2041C or CHM 2045C.
Structure and function of eucaryotic and procaryotic cells and viruses. Molecular and Mendelian genetics.

BSC 2012C Populations and Communities. F, S, SS.
Credits: 4; Prereq: BSC 2010C.
An examination of the principles of population genetics, population growth and regulation, evolution, behavior, biogeography and community organization.

BOTANY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Vasil, I.K., Chairman; Mullins, J.T., Associate Chairman; Aldrich, H.C.†; Anthony, D.S.; Bowes, G.; Davis, J.S.; Deevey, E.S.†; Ewel, J.J.; Gamble, J.F.†; Griffin, D.G.; Humphreys, T.E.; Kimbrough, J.W.; Lucansky, T.W.; Lugo, A.E.; Popenoe, H.†; Roberts, R.M.†; Seymour, C.P.†; Shanor, L.; Smith, R.C.; Ward, D.B.
†Courtesy Appointments

College Advisor; T.W. Lucansky

Students planning a major in botany, either in the College of Agriculture or in the College of Arts and Sciences, should consult a departmental advisor as early as possible. The major in Botany shall consist of not less than 36 credits, including BSC 2010, BOT 2021, PCB 3033, BOT 3503-3503L, BOT 3303 or BOT 5225, and BOT 3153 or 5725. The remaining hours of electives for the major will be chosen to meet the particular interest of the student for specialization in botany. Courses are to be selected from among the following: BOT 3800, 4283, 5625, 5046, 5695, 5505, 5435, 5405, 5485, 5755, 5225, 5725, and PCB 5115. Majors are also required to present credit for a course in genetics with laboratory (AGR 3303-3305 or PCB 3060), a course in organic chemistry (CHM 3200-3200L or CHM 3210, 3210L, 3211, 3211L, a year of college physics or equivalent (PHY 2004-2005 or PHY 2050, 2051, 2052 with accompanying labs), MAC 2223 or 3311, and ZOO 3303 or 3203. Those who are planning to pursue graduate study should include in their program two years of a foreign language. For other degree requirements and programs see Agriculture, Lower Division; Botany; Agriculture, Upper Division; B.S. in Biology, College of Arts and Sciences.

DEPARTMENTAL HONORS

To be eligible to work for departmental honors in Botany, a student must have a minimum grade point average of 3.0 overall and 3.2 in at least 20 hours of Botany. Seniors working for departmental honors in Botany will be expected to enroll in BOT 4905 for 2 quarters of the Senior year. Approval to undertake honors work must be secured from the Departmental Honors Committee prior to the first registration for BOT 4905.

Biochemistry

BCH 3023 Elementary Organic and Biological Chemistry. F, SS.
Credits: 5; Prereq: CHM 2041.
Elementary organic chemistry and biochemistry for students in the agricultural technical curricula. This is a terminal course and is not part of any sequence of courses in the Chemistry Department.

Botany

BOT 1010C Introductory Botany.
Credits: 5
The first quarter of BTY 181-203 sequence. Structures and functions of cells, tissues and organs of flowering plants. Students with credit in CBS 231 or equivalent or ZY 202 or BIO 201-203 may not register in this course for credit but should take BTY 203.

BOT 2011C General Botany. F, W, S.
Credits: 5; Prereq: BOT 1020C or APB 2153 or equivalent or ZOO 2011 or BSC 2010C-2012C or equivalent.
Survey of major plant groups with regard to structure, life histories and classification.

BOT 2710 Practical Plant Taxonomy. W.
Credits: 3
An introductory course for higher plant taxonomy, including consideration of principles of systematic botany, nomenclature and classification, but emphasizing identification. A student completing this course should be able to identify the common ferns, fern allies, gymnosperms and flowering plants of field and garden.

BOT 3153C Local Flora. S, SS.
Credits: 3, Prereq: BOT 2021C or APB 2151 and APB 2150L.
Laboratory observation of the gross features of vascular plants and practice in use of keys to identify plants. Elementary ecology of principal types of plant communities in Northern Florida. Field trips.

BOT 3163C Poisonous Plants.
Credits: 3; Prereq: BOT 2021C or equivalent.
The identification of plants in Florida toxic to man and animals, the symptoms of their toxicity, and some consideration of treatment.

BOT 3173C Weed Identification.
Credits: 2; Prereq: BOT 2021C or equivalent.
The identification of weeds in Florida, their distribution and importance in different areas of the State. May be taken in conjunction with PLS 442 Weed Science.

BOT 3303C Introductory Vascular Plant Morphology. S.
Credits: 5; Prereq: BOT 2021C or APB 2151 and APB 2150L.
Salient features of representative members of each group. Consideration of origin of land plants and primitive land plants. Emphasis given to principles on which morphological and anatomical interpretations are made.

BOT 3503 Elementary Plant Physiology. F, W.
Credits: 4, Prereq: BOT 1020C or BSC 2010-2012C or APB 2153 and APB 2150L, CHM 2043.
The chemical organization, cellular organization, metabolism, nutrition and growth of the higher plants.

BOT 3503L Elementary Plant Physiology Laboratory. F, W.
Credits: 2, Coreq: BOT 3503.
Laboratory experiments to accompany BTY 310.

BOT 3800 Plants in Human Affairs. F.
Credits: 3
The role of crop plants in the development of human civilization, and their effect on the course of world history, politics, economy, and culture. Survey of important plants and plant products used by man for various purposes.

BOT 4053 Practical Experience in Teaching Botany. F, W, S, SS.
Credits: 3; Prereq: senior status with recommendations from two faculty members, including the course instructor.
Participation in teaching lower division botany courses with practical experience in instructional procedures, testing and grading, course and laboratory preparation and laboratory assistance. May be repeated with change of content up to a maximum of 6 credits.

BOT 4283C Microtechnique.
Credits: 3; Prereq: one year of college biology.
Practice in methods of preparing, recording, and illustrating biological materials for microscopic studies.

BOT 4905 Individual Studies in Botany. F, W, S, SS.
Credits: 3; Prereq: at least twelve hours of botany and consent of instructor.
Qualified students and the instructor choose a particular problem for study. May be repeated for a maximum of six credits.

Process Biology

PCB 3043C Introduction to Ecology. F.
Credits: 5; Prereq: introductory college biology.
Basic principles of ecology as they apply to environmental problems, including major terrestrial and aquatic ecosystems of Florida.

GRADUATE COURSES
Applied Biology

APB 5415 Radiosotope Theory and Techniques. W.
Credits: 5

Botany

BOT 5225C Plant Anatomy. S.
Credits: 5

BOT 5405C Phycology. F.
Credits: 5

BOT 5435C Introductory Mycology. F.
Credits: 5

BOT 5485C Mosses and Liverworts. W.
Credits: 5

BOT 5505C Intermediate Plant Physiology. S.
Credits: 5

BOT 5625 Plant Geography. W.
Credits: 3

BOT 5695 Ecosystems of Florida. S.
Credits: 5

BOT 5725C Taxonomy of Seed Plants. S.
Credits: 5

BOT 5755C Lower Vascular Plants. F.
Credits: 5

BOT 6256C Plant Cytology. S.
Credits: 5

BOT 6316C Developmental Morphology of Flowering Plants. W.
Credits: 5

BOT 6326C Methods and Applications of Plant Cell and Tissue Culture. S.
Credits: 5

BOT 6346C Biology and Taxonomy of the Myxomycetes and Phycomycetes. W.
Credits: 5

BOT 6446 Biology and Taxonomy of the Basidiomycetes. SS.
Credits: 5

BOT 6466C Biology and Taxonomy of Ascomyetes and Their Imperfect Stages. S.
Credits: 5

BOT 6476C Lichenology. SS.
Credits: 5

BOT 6496C Fungal Physiology. F.
Credits: 5

BOT 6516 Plant Metabolism. W.
Credits: 3

BOT 6526 Plant Nutrition. F.
Credits: 3

BOT 6566 Plant Growth and Development. F.
Credits: 3

BOT 6576 Photophysiology of Plant Growth. W.
Credits: 4

BOT 6646C Ecology of Aquatic Plants. SS.
Credits: 5

BOT 6666 Advanced Tropical Botany.
Credits: 12

BOT 6716C Advanced Taxonomy. F.
Credits: 3

BOT 6905 Individual Studies in Botany. F, W, S, SS.
Credits: 1 to 5, maximum of 10 in each area.

BOT 6910 Supervised Research.
Credits: 1 to 5††

BOT 6927 Advances in Botany. F, W, S, SS.
Credits: 1 to 5, maximum of 5.

BOT 6936 Graduate Student Seminar. F, W, S.
Credits: 1

BOT 6940 Supervised Teaching.
Credits: 1 to 5††

BOT 6951 Tropical Biology: An Ecological Approach.
Credits: 12

BOT 6971 Master's Research.
Credits: 1 to 15††

BOT 7980 Doctoral Research.
Credits: 1 to 15††

Process Biology

PCB 5046C Advanced Ecology. F.
Credits: 4

PCB 5115C Cytology. F.
Credits: 5

PCB 6176 Electron Microscopy of Biological Materials. W.
Credits: 2

PCB 6176L Laboratory in Electron Microscopy. W.
Credits: 2

PCB 6216 Cytochemistry. S.
Credits: 4

PCB 6356C Ecosystems of the Tropics. W.
Credits: 4

PCB 6626C Fungal Genetics. F.
Credits: 5

PCB 6691 Topics in Genetics. F, W, S.
Credits: 2 to 4, maximum of 12.

BROADCASTING
College of Journalism and Communications

INSTRUCTIONAL STAFF, 1977-78

Christiansen, K.A., Chairman; Conner, H.H.; Counts, F.S.; De Los Santos, A.E.; Edwardson, M.N.; Grooms, D.A.; Hackel, D.R.; Jacobs, A.J.; Miles, D.W.; Pactor, H.S.; Wells, E.L.

Offerings in Broadcasting are designed primarily for those planning professional careers in radio and television media and in related fields. These courses, however, may be taken for elective credit by students in all Upper Division units of the University. Students interested in major work in Radio, Television, Advertising, Journalism and Public Relations are also referred to course offerings under Advertising and Journalism and to the requirements of the College of Journalism and Communications.

Education: Technology and Media
GRADUATE COURSES

EME 5506 Teaching Through Television. F, S, SS.
Credits: 5; Prereq: Senior or Graduate Standing.
For graduate courses in this area see listings under Communication.

Film

FIL 3210 Film Production for Industry (8 mm). W, S.
Credits: 3
Preparation of inexpensive documentaries and training films using Super 8mm sound and silent cameras. Emphasis on uses in public relations. Student will pay for film and developing.

FIL 4200 Communicative Elements in Film Production. W.
Credits: 4
Study of films with reference to the contribution made by their components to the film-makers statement and intent. Emphasis will be placed upon the non-fiction film.

FIL 4202 Cinematography for TV. F, W, S, SS.
Credits: 4; Prereq: RTV 2000, RTV 3100, RTV 3210, or permission of instructor.
A basic course in handling motion picture equipment and filming assignments for television. Students are required to provide class materials, including cost of raw film stock and cost of film processing.

Radio-Television

RTV 2000 Introduction to Broadcasting. F, W, S, SS.
Credits: 3
An introduction to the cultural, social legal, business and career aspects of Broadcasting.

RTV 3100 Broadcast Writing. F, W, S, SS.
Credits: 4; Prereq: MMC 2100 and RTV 3210 or permission of instructor.
Writing for radio and television: Announcements, interviews, music, special events, documentaries, commentaries.

RTV 3201 Broadcast Production 3. F, W, S, SS.
Credits: 3; Prereq: RTV 3220.
Applications of the elements of television production, direction and presentation.

RTV 3210 Broadcast Production 1. F, W, S, SS.
Credits: 3; Prereq: RTV 2000, Junior standing, or permission of instructor.
Fundamentals of broadcast announcing, presentation, and interviewing; audio control room procedures; audio recording and editing; use of music and sound effects.

RTV 3220 Broadcast Production 2, F, W, S, SS.
Credits: 3; Prereq: RTV 3210.
Basic television production and direction, audio and video controls, studio cameras, slide and film projection, staging, lighting, graphics, composition.

RTV 3300 Broadcast New Writing. F, W, S, SS.
Credits: 4; Prereq: MMC 2100, RTV 3100 and ability to type.
Basic instruction and practice in news gathering, writing and announcing, with special attention given to the handling of reporting assignments for the broadcast news media.

RTV 3403 Mass Media Processes and Effects. F, W, S.
Credits: 4
The flow and impact of messages from mass media; includes consideration of semantics, attitude change, behavior modification, and current theories of communication behavior.

RTV 4101 Advanced Film Writing. W, SS.
Credits: 3; Prereq. Senior standing; RTV 3100 and RTV 3210 or permission of instructor.
Researching, writing and preparing the public relations, educational or documentary film.

RTV 4206 Advanced Television Directing. W, S.
Credits: 3; Prereq: Senior standing; RTV 3100, RTV 3201 and permission of instructor.
A study of the aesthetic and psychological factors of television production and their creative application in program production and execution.

RTV 4302 Radio-TV Reporting. F, W, S.
Credits: 4; Prereq: RTV 3300 and FIL 4202.
News writing, editing and processing for the broadcast media.

RTV 4311 Documentary for TV. F, S.
Credits: 4; Prereq: FIL 4202 and RTV 4101.
Planning, producing, filming the TV news documentary and the program documentary. Students required to provide class materials, including cost of raw film stock and cost of film processing.

RTV 4500 Broadcast Program Management. F, W, S, SS.
Credits: 4; Prereq: Senior standing, RTV 3403, RTV 3100 or RTV 3220
Program planning and schedule building.

RTV 4905 Individual Projects in Radio, Television and Film. F, W, S, SS.
Credits: 1 to 5; Prereq: At least 15 hours of

††Grading is on a S-U basis only.

BUILDING CONSTRUCTION

Broadcasting courses in the Upper Division and approval of the Dean.
Projects must also have the approval of the Broadcasting faculty. The student and the instructor concerned will choose a problem or project which will give the student experience in this major field

RTV 4930 Special Study in Broadcasting. F, W, S.
Credits: 1 to 5, Open only to Seniors and with permission of the instructor.
Variable content, providing opportunity for study in areas of Broadcasting such as Television Staging and Lighting, Film Criticism, Communication Theory and other fields. (May be repeated once for total of 6 credits.)

RTV 4931 Seminar: Ethics and Problems in Broadcasting. F, W, S, SS.
Credits: 4 Open only to Broadcasting Seniors in their graduating quarter, or upon approval of instructor
Investigation and discussion of social problems, ethics, and responsibilities in broadcasting.

RTV 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: At least 15 hours of Broadcasting courses in the Upper Division and approval of the Dean.††
Students and instructor concerned will select an appropriate work area related to the field of broadcasting or an appropriate communications area where the student may gain work experience and/or on-the-job training. (May be repeated for a total of 10 hours. Content must be changed).

BUILDING CONSTRUCTION
College of Architecture

INSTRUCTIONAL STAFF 1977-78

Halperin, D. A., Director; Aderholdt, R.W.; Brown, B.J., Jr.; Crosland, R.E.; Eppes, B.G.; Grim, C., Jr.; Gunby, W.R.; Holland, H.F.; Johnson, L.A.; Krausche, C.E.; Martin, T.E.; Pierce, D.R.; Tracey, V.G.; Trimmer, J.M.; Underberger, H.L.; Ziegler, C.D.

BCN 1210 Construction Materials. F, W, S.
Credits: 4
Sources, properties and uses of construction materials.

BCN 2400 Construction Mechanics 1. F, W, S.
Credits: 5; Prereq: MAC 2223, PHY 2004C.
The study of external forces, truss analysis and geometric properties of members as applied to the design of structures. Primarily for building construction majors.

BCN 3223 Construction Techniques 1. F, W, S.
Credits: 5; Prereq: ARC 1126, BCN 1210.
Study and analysis of job planning required, work methods, materials and equipment employed on light construction projects which include residential and small commercial buildings.

BCN 3224 Construction Techniques 2. F, W, S, SS.
Credits: 5; Prereq: BCN 3223.
Continuation of BCN 3223, Construction Techniques 1, as applied to medium commercial and industrial construction projects.

BCN 3225 Construction Techniques 3. F, W, S, SS.
Credits: 5; Prereq: BCN 3224.
Continuation of BCN 3224, Construction Techniques 2, as applied to heavy commercial and industrial construction projects.

BCN 3256C Construction Drawing. F, W, S.
Credits: 2, Prereq: ARC 1126.
Principles and practices of surveying and drawing applied to construction.

††Grading is on a S-U basis only.

BCN 3281L Construction Methods Laboratory. F, W, S.
Credits: 3; Prereq: MAC 1132.
Construction aspects of surveying with field and classroom exercises in the use of transit, level, chain and related equipment.

BCN 3401 Construction Mechanics 2. F, W, S.
Credits: 5; Prereq: MAC 2223, PHY 2004C, BCN 2400
The study of stresses and strains and external forces on indeterminate members as applied to the design of structures. Primarily for BCN majors.

BCN 3431 Structures 1. F, W, S, SS.
Credits: 4, Prereq: BCN 3401.
Theory and principles of design of steel structural elements and connections and their applications in construction.

BCN 3461 Structures 2. F, W, S, SS.
Credits: 4; Prereq. BCN 3401.
Theory and principles of design of wood and timber structural elements and connections and their applications in construction.

BCN 3611 Quantity Surveying. F, W, S, SS.
Credits: 4; Prereq: BCN 3224. Coreq: BCN 3225.
Classification of work and quantity survey techniques applied to construction projects.

BCN 4012 History of Construction. F, W, S, SS.
Credits: 4; Prereq: Junior standing.

BCN 4227 Construction Techniques 4. F, S.
Credits: 4; Prereq: BCN 3225.
Advanced continuation of BCN 3225, Construction Techniques 3.

BCN 4462 Structures 3. F, W, S, SS.
Credits: 4; Prereq: BCN 3431.
Theory and principles of design of reinforced concrete structural elements and their applications in construction.

BCN 4464 Temporary Structures. F, W.
Credits: 4; Prereq: BCN 3461, 3225.
Design and erection of temporary construction structures.

BCN 4471 Industrialized Building Techniques. S.
Credits: 4; Prereq: Senior standing, BCN 3224.
Study of industrialized construction techniques, designs and costs for American and foreign systems.

BCN 4500 Environmental Technology 1. F, W, S, SS.
Credits: 4; Prereq: PHY 2005.
Principles and practices of building piping systems and consideration of code requirements and cost estimation.

BCN 4510 Environmental Technology 3. F, W, S, SS.
Credits: 4; Prereq: PHY 2005, BCN 3223, 4500, 4521
Principles and practices of year-around air conditioning, ventilation and sound control in buildings including code provisions and cost estimation.

BCN 4521 Environmental Technology 2. F, W, S, SS.
Credits: 4; Prereq: PHY 2005.
Principles and practices of electrical systems and vertical transportation for buildings including code provisions and cost estimation.

BCN 4612 Construction Estimating. F, W, S, SS.
Credits: 4; Prereq: BCN 3611.
Analysis and determination of costs of construction operations including applicable indirect and overhead costs and the preparation of bid proposals for construction projects.

BCN 4620 Cost Estimate Analysis. F, S.
Credits: 4; Prereq. ACC 2001, BCN 4612.
Comparative analysis of actual and estimated costs as used for project control.

BCN 4700 Construction Management 1. F, W, S, SS.
Credits: 4, Prereq: BUL 4121, BCN 3224.
Management principles, methods and problems relating to construction.

BCN 4710 Construction Management 3. F, W, S, SS.
Credits: 4, Prereq: BCN 4750.
Continuation of Construction Management 2.

BCN 4713 Construction Labor. F, S.
Credits: 4; Prereq: Senior standing and BCN 4700.
A history of the construction labor movement and other factors leading up to the present construction labor market as it exists today, as well as an analysis of these problems from the viewpoint of construction unions, non-union construction labor, legal and construction management.

BCN 4720 Construction Planning and Control. F, W, S, SS.
Credits: 4; Prereq: COP 3110, BCN 4612.
Time-cost relationships for the various construction operations.

BCN 4750 Construction Management 2. F, W, S, SS.
Credits: 4; Prereq: BCN 4700, ACC 2001.
Continuation of Construction Management 1.

BCN 4751 Site Development. F, W, S, SS.
Credits: 4; Prereq: BCN 3256, 3225, 4612, 4750.
Principles and practices of residential, business and industrial land development.

GRADUATE COURSES

BCN 5226 Advanced Construction Techniques. F, S.
Credits: 4; Prereq: BCN 3225.

BCN 5463 Construction Structures. F, W.
Credits: 4. Prereq: BCN 3461, 3225.

BCN 5470 Systems of Architectural Construction. S.
Credits: 4. Prereq: BCN 3224.

BCN 5528 Survey of Construction Techniques. W.
Credits: 5

BCH 5625 Construction Cost Analysis. F, S.
Credits: 4. Prereq: ACC 2001, BCN 4612.

BCN 5715 Advanced Construction Labor Problems. F, W.
Credits: 4

BCN 5905 Special Studies in Construction. F, W, S, SS.
Credits: 1 to 5, max. of 15; Prereq: Senior or graduate standing.

BCN 6910 Supervised Research.
Credits: 1 to 5††

BCN 6931 Construction Management. F, W, S, SS.
Credits: 1-10, maximum of 15.

BCN 6932 Building Construction Management. F, W, S, SS.
Credits: 1-10, maximum of 15.

BCN 6933 Building Research. F, W, S, SS.
Credits: 1-10, maximum of 15††

BCN 6934 Construction Research. F, W, S, SS.
Credits: 1-10, maximum of 10††

BCN 6940 Supervised Teaching.
Credits: 1 to 5††

BCN 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15††

BUSINESS ADMINISTRATION—GENERAL
College of Business Administration

INSTRUCTIONAL STAFF 1977-78

Jennings, R.B.; Ray, J.B.; Wyatt, J.W.

Business Law

BUL 4100 Business Law. F, W, S, SS.
Credits: 5
Introduction to the legal system as an aspect of the business environment. Litigations; Legal Reasoning, the functions of a Legal System. Examples taken primarily from the Law of Contracts and Agency.

BUS 4112 Business Law. F, W, S, SS.
Credits: 5
A study of the fundamental principles governing the law of contracts, Commercial Paper, Documents of Title, Sales, Secured Transactions and related subject areas. Primary emphasis is given to the Uniform Commercial Code.

BUL 4305 Business Law. F, W, S, SS.
Credits: 4; Prereq: BUL 4101, BUL 4121.
Real and Personal Property, Mortgages and Liens, Landlord and Tenant, Wills, Trusts, Decedents' Estates, Bankruptcy, Agency Partnerships, Corporations.

Computer Applications

CAP 2011 Introduction to EDP. F, W, S, SS.
Credits: 4
An introduction to the basic elements of the computer system, computer terminology, and concepts of data structures and file processing.

General Business

GEB 4949 Co-op Work Experience. F, W, S, SS.
Credits: 3 to 5; Taken on S-U basis only. Prereq: Consent of the Cooperative Education Coordinator and the Department Chairman.
Applied work in business administration. Requires several papers and reports. May be repeated with change of content up to a maximum of 10 credits.

Quantitative Methods in Business

QMB 3700 Quantitative Methods for Business and Economic Analysis. F, W, S, SS.
Credits: 5; Prereq: MAC 3311-3312 STA 3023, ECO 3411.
Quantitative techniques and analysis for business and economic decision making under conditions of uncertainty, risks, and assumed certainty. Topics include some aspects of calculus, matrix algebra, probability theory, linear programming and game theory.

GRADUATE COURSES

For admission to courses listed below, the student must have been admitted to the Graduate School and normally should have undergraduate courses in fields pertinent to the graduate courses selected; or where necessary, special arrangements may be made with the approval of the dean.

Computer Applications

CAP 5009 Computer Concepts in Business.
Credits: 3

CAP 5021 Computer Based Business Management. F, W, S, SS.
Credits: 4

Finance

FIN 6937 Advanced Finance Topics.
Credits: 4

General Business

GEB 5756 Introduction to Managerial Statistics.
Credits: 4

GEB 5805 Mathematical Methods and their Application to Business and Economic Analysis. F, S.
Credits: 5

GEB 6705 Managerial Accounting.
Credits: 4

GEB 6757 Managerial Quantitative Analysis.
Credits: 5

Management

MAN 6108 Concepts and Methods in the Behavioral Science
Credits: 5

MAN 6156 Human Behavior in Organizations.
Credits: 4

Marketing

MAR 6716 Problems and Methods of Marketing Management.
Credits: 4

Statistics

STA 6357 Analysis of Decisions Under Uncertainty.
Credits: 3

STA 6358 Statistical Analysis for Managerial Decisions.
Credits: 3

CAREER DEVELOPMENT PROGRAM
University College

INSTRUCTIONAL STAFF 1977-78

Griffis, C.S., Director.

General Information

The Career Development Program offers students an opportunity to explore factors which will assist them in determining career and life choices. Courses are interdisciplinary and focus on a systematic process for value clarification, decision-making, goal setting, career options and techniques for the job search. Students design career patterns to meet their personal, educational and professional goals. Career opportunities in business, industry and government are viewed in terms of trends in the economy. Courses are offered for elective credit. No prerequisites are required.

STD 4151 Career Development
Credits: 4
Exploration of factors which determine career and life choices, focusing on personal goals and values, college majors, and career opportunities in the fields of business, industry and government. Career patterns are designed to meet personal, educational and professional goals. Current trends in the economy are explored in the assessment of career opportunities.

STD 4905 Independent Work.
Credits: 1 to 5
Designed for students who wish to investigate a particular area of interest in career development. Also used for special topics courses. May be repeated with change of content.

CHEMICAL ENGINEERING
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Biery, J.C., Chairman; Bennett, R.B.; Block, S.S.; Brown, H.C.; De Gance, A.E.; Fahien, R.W.; Gordon, R.J.; Hoflund, G.B.; Johns, L.E., Jr.; Kirmse, D.W.; Lee, H.H.; May, F.P.; O'Connell, J.P.; Shah, D.O.; Smutz, M.; Tyner, M.; Walker, R.D.

Chemistry

GRADUATE COURSES

CHM 5272 The Organic Chemistry of Polymers.
Credits: 3

CHM 5511 Physics & Physical Chemistry of Polymers. F.
Credits: 3

Computer Applications

CAP 3210 Computer Model Formulation. F, S.
Credits: 3; 2-1 hr. lec., 1-2 hr. dis. Prereq: MAC 3314, Coreq: MAP 3302 or EGM 3311.
Solutions of scientific and engineering problems using digital computers. Formulation of models for describing physical processes, numerical analysis, computer programming.

Engineering: Chemical

ECH 1001 Freshman Seminar in Chemical Engineering. F, W, S.
Credits: 1 to 2, 1 to 2-1 hr. dis.
Small group discussion with a faculty member interested in a field of chemical engineering endeavor. Consult department for particular subjects offered each term. May be repeated with change of content for a maximum of 4 credits.

ECH 3012 Elements of Chemical Engineering 1. W.
Credits: 3; 3-1 hr. lec.; Coreq: CHM 2047, PHY 2042, MAP 3302 or EGM 3311.
Process synthesis in chemical engineering.

ECH 3023 Introduction to Chemical Engineering. F, S.
Credits: 5, 5-1 hr. lec., 1-1 hr. dis. Prereq: PHY 2042, CHM 2047.
The conservation laws of mass and energy applied to the solution of industrial chemical process problems.

ECH 3023L Chemical Engineering Lab 1. F.
Credits: 1, 1-1 hr. lec., 1-2 hr. lab.
Conservation laws, process measurements in engineering chemistry.

ECH 3101 Chemical Engineering Thermodynamics 1. W.
Credits: 4
The principles of classical and statistical thermodynamics, and their application to systems of constant composition.

ECH 3109 Seminar in Chemical Engineering Thermodynamics. W.
Credits: 2, 2-1 hr. rec.; Coreq: CHM 4411.
Discussion of chemical engineering applications of the first and second laws in systems of constant composition.

ECH 3203 Chemical Engineering Operations 1. F, W.
Credits: 3, 3: 1 hr. lec.; Prereq: ECH 3023, CAP 3210.
Fluid mechanics of chemical engineering systems. Non-Newtonian flow. Mixer design. Fluidization. Filtration.

ECH 3204 Chemical Engineering Operations 2. S.
Credits: 3, 3-1 hr. lec.; Prereq: ECH 3203.
Heat transfer and applications to heat exchanges, crystallization, drying.

ECH 3303 Process Systems Analysis. W.
Credits: 2: 2-1 hr. lec.; 1-1 hr. dis.; Prereq: MAP 3302 or EGM 3311.
Analysis of transients in process systems. Analog computation in chemical engineering.

††Grading is on a S-U basis only.

Descriptions

CHEMICAL ENGINEERING

ECH 3303L Chemical Engineering Laboratory 2. W.
Credits: 1, 1-1 hr. lec.; 1-3 hr. lab.; Prereq. or Coreq: ECH 3303.
Laboratory work associated with ECH 3303.

ECH 3783 Technology and Survival. F, W, S.
Credits: 3; 3, 3-1 hr. lec.
Technological problems relating to the quality of life and survival in the world of today and tomorrow. Considered are the limits of mineral and energy resources, population, food, pollution and environmental deterioration.

ECH 3803 Chemistry in Engineering. F, W, S.
Credits: 4, 4-1 hr. lec.; Prereq: CHM 2046 or CHM 2042.
Application of the principles of chemistry in the solution of common engineering problems. Primarily for non-chemical engineering students.

ECH 3804L Chemical Engineering Laboratory 3. F, W, S, SS.
Credits: 2, 1-1 hr. lec., 1-3 hr. lab., 1-1 hr. dis.; Prereq: CHM 2047.
Laboratory work and demonstrations of instrumentation for process measurement and control.

ECH 4123 Chemical Engineering Thermodynamics 2. S.
Credits: 5; 5-1 hr. lec.; Prereq: ECH 3109 or 3101.
The application of thermodynamic principles to systems of variable composition, including the study of phase and chemical equilibria.

ECH 4144 Molecular Phenomena in Chemical Engineering. W.
Credits: 4, 2-1 hr. lec.; 2-1 hr. dis.; Prereq: ECH 4123.
Basic statistical mechanical relations for equilibrium and nonequilibrium properties of real systems. Intermolecular forces. Properties at surfaces and interfaces.

ECH 4145 Applied Molecular Theory. S.
Credits: 3, 3-1 hr. lec., Prereq: ECH 4123.
The application of statistical thermodynamics and kinetic theory in the description of the behavior of pure fluids and fluid mixtures.

ECH 4221L Chemical Engineering Laboratory 9. F.
Credits: 1, 1-3 hr. lab.; Prereq: ECH 4224.
Individual laboratory work not necessarily associated with a particular course.

ECH 4224L Chemical Engineering Operations Laboratory 1. F, W, SS.
Credits: 3, 1-1 hr. dis., 1-2 hr. dis., 1-4 hr. lab; Coreq: ECH 3204.
Laboratory work in unit operations involving heat and momentum transfer.

ECH 4264 Elementary Transport Phenomena. F.
Credits: 3, 3-1 hr. lec., 1-1 hr. dis.; Prereq: Senior standing and permission of instructor.
Flux laws and conservation equations for heat, mass and momentum transport in rectangular, cylindrical and spherical geometries; applications to laminar and turbulent flow systems.

ECH 4264L Chemical Engineering Laboratory 4. W, S.
Credits: 1, 1-3 hr. lab.; Prereq. Coreq. ECH 4264.
Laboratory work associated with ECH 4264.

ECH 4281 Multidirectional Transport Phenomena. W.
Credits: 2 to 4; 2 to 4-1 hr. lec.; Prereq: ECH 4264.
Equations of change for energy, mass, and momentum transport in vector form applied to multidirectional problems.

ECH 4323 Process Control Theory. S.
Credits: 3, 3-1 hr. lec.; 1-1 hr. dis.; Prereq: ECH 3303 CAP 3210, or consent of instructor.
The analysis and automatic control of simple process systems in chemical engineering.

ECH 4323L Chemical Engineering Laboratory 5. S.
Credits: 1, 1-3 hr. lab; Coreq: ECH 4323.
Laboratory work associated with ECH 4323.

ECH 4403 Chemical Engineering Operations 3. F, SS.
Credits: 3, 3-1 hr. lec., 1-1 hr. dis.; Prereq: ECH 3203.
Theory, design, and evaluation of diffusional mass transfer processes including distillation, absorption and extraction.

ECH 4404L Chemical Engineering Operations Laboratory 2. F, W, S.
Credits: 3, 1-1 hr. dis., 1-2 hr. dis., 1-4 hr. lab.; Prereq: ECH 4224, 4403.
Laboratory work in unit operations involving mass transfer.

ECH 4504 Chemical Kinetics and Processing. F, SS.
Credits: 3, 3-1 hr. lec., 1-1 hr. dis.; Prereq: ECH 4123, Coreq: ECH 4264.
Concepts of elementary, complex and catalytic kinetics as applied to the engineering design of batch, backmix, tubular and fluidized bed reactors.

ECH 4504L Chemical Engineering Laboratory 7. F, W, S.
Credits: 2, 1-3 hr. lab. Prereq. or Coreq: ECH 4504.
Laboratory work associated with ECH 4504.

ECH 4524 Reactor Dynamics and Design. S.
Credits: 3, 2-1 hr. lec.; 1-1 hr. dis.; Prereq: ECH 4504.
Analysis of chemical reactor transient behavior and stability. Pilot plant models and scale up methods. Introduction to optimal design and its application.

ECH 4604 Cost Estimation of Process Designs. W.
Credits: 3, 3-1 hr lec.; 1-1 hr. dis.; Prereq: ECH 4403.
Investment requirements, cost estimates and profitability analyses of chemical processes for design and development. Case study design problems in preparation for ECH 4644.

ECH 4605 Process Economics. S.
Credits: 3, 3-1 hr. lec.; Prereq: Senior classification.
Engineering economy principles in the chemical field. Time value of money and profitability. Linear programming and replacements. Chemical industry economics and finance, computer applications.

ECH 4624 Process Opimization. W.
Credits: 3, 3-1 hr. lec.; Prereq: 4EG Classification.
A review of mathematical techniques for handling multistage decision problems encountered in process design and control. Introduction to dynamic programming.

ECH 4644 Process Design. S.
Credits: 3, 2-1 hr. lec., 1-3 hr. lab.; Prereq: ECH 4504, ECH 4403, ECH 4604.
Elementary design of conventional processes, including selection of process, equipment sizing, process specifications, economic evaluation, safety in design.

ECH 4664 Advanced Process Design. F.
Credits: 3, 2-1 hr. lec., 2-1 hr. dis.; Prereq: ECH 4644.
An extension of CHE 473 involving more creative effort and less conventional process systems.

ECH 4704 Organic Chemical Processing. W.
Credits: 3, 3-1 hr. lec.; Prereq: Organic Chemistry.
The fundamental principles involved in the manufacture of organic compounds.

ECH 4705 Electrochemical Engineering. S.
Credits: 3, 3-1 hr. lec.; Coreq: CAP 3210 or EMA 3010.
Application of the principles of transport phenomena and mass transfer theory to the analysis of electro chemical processes, and to problems of scale-up and design.

ECH 4724 Interfacial Phenomena for Engineers. S.
Credits: 3, 3-1 hr. lec., 1-1 hr. dis.; Prereq: CHM 2040 or consent of instructor.
Theoretical and Practical aspects of interfaces and surfactants in wetting, solubilization, foams, and emulsions, lubrication, flotation of minerals, and biomedical applications.

ECH 4824 Materials of Chemical Engineering. S.
Credits: 1 to 3. Prereq: ECH 4144 and ECH 4123. Coreq: EMA 3010.
Relations between microscopic structure and macroscopic mechanical, thermal, and electrical properties of organic and inorganic solids. Engineering applications, including corrosion.

ECH 4825 Polymeric Materials. S.
Credits: 3°, 3-1 hr. lec.; Prereq: CAP 3210 or EMA 3010.
Theoretical and practical aspects of plastics, elastomers, fibers, coatings and other polymeric materials.

ECH 4842 Mathematical Methods in Chemical Engineering. F.
Credits: 3°, 3-1 hr. lec.; Prereq: ECH 3204 or consent of instructor.
The application of mathematics to chemical engineering calculations, including ordinary, and partial differential equations. Numerical, analytical and computer calculations.

ECH 4905 Special Problems in Chemical Engineering. F, W, S, SS.
Credits: 1 to 6. May be repeated for a maximum of 12 credits.

ECH 4934 Professional Seminar. F, S.
Credits: 1, 1-1 hr. lec.

ECH 4944 Practical Work in Chemical Engineering. F, W, S, SS.
Credits: 1 to 5.

ECH 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5 per registration for a maximum of 5. Prereq: Freshman year.
Practical co-op work experience under approved industrial supervision, as set forth in College Regulations.

GRADUATE COURSES

ECH 5344L Process Systems Laboratory. W.
Credits: 3

ECH 5708 Disinfection, Sterilization, and Preservation. W.
Credits: 3

ECH 6126 Thermodynamics of Reaction and Phase Equilibria. F.
Credits: 3

ECH 6146 Applied Statistical Mechanics.
Credits: 3

ECH 6147 Statistical Thermodynamics. W.
Credits: 3

ECH 6159 Seminar in Thermodynamics.
Credits: 2. Maximum of 6 credits.

ECH 6206 Turbulent Transport Phenomena.
Credits: 3

ECH 6207 Rheology.
Credits: 3

ECH 6208 Non-Newtonian Fluid Dynamics.
Credits: 3

††Grading is on a S-U basis only.

ECH 6226 Heat Transfer Operations.
Credits: 3

ECH 6261 Introduction to Transport Phenomena. F.
Credits: 3

ECH 6263 Advanced Transport Phenomena. S.
Credits: 3

ECH 6269 Seminar in Transport Phenomena.
Credits: 2. Maximum of 6 credits.

ECH 6285 Transport Phenomena. W.
Credits: 3

ECH 6286 Interfacial Transport Phenomena.
Credits: 3

ECH 6296 Transport Properties and Irreversible Thermodynamics.
Credits: 3

ECH 6306 Process Dynamics 1. S.
Credits: 3

ECH 6307 Process Dynamics 2. W.
Credits: 3

ECH 6326 Computer Control of Processes.
Credits: 3

ECH 6328 Seminar in Process Control
Credits: 2. Maximum of 6 credits.

ECH 6406 Mass Transfer Operations.
Credits: 3

ECH 6413 Stagewise Separations Processes.
Credits: 3

ECH 6428 Advances in Separations Processes.
Credits: 3

ECH 6506 Chemical Engineering Kinetics.
Credits: 3

ECH 6526 Reactor Design and Optimization.
Credits: 3

ECH 6606 Process Economy Analysis.
Credits: 3

ECH 6626 Optimization Techniques.
Credits: 3

ECH 6627 Process Systems Optimization.
Credits: 3

ECH 6646 Process Equipment Design.
Credits: 3

ECH 6647 Process and Plant Design.
Credits: 3

ECH 6666 Design Techniques for Process Systems. S.
Credits: 3

ECH 6688 Advances in Process Systems Engineering.
Credits: 3

ECH 6706 Chemical Energy Conversion.
Credits: 3

ECH 6707 Process Engineering.
Credits: 3

ECH 6726 Interfacial Phenomena 1.
Credits: 3

ECH 6727 Interfacial Phenomena 2.
Credits: 3

ECH 6746 Biochemical Engineering.
Credits: 3

ECH 6766 Particulate Systems.
Credits: 3

ECH 6826 Engineering Properties of Organic Materials.
Credits: 3

ECH 6827 Macromolecular Materials.
Credits: 3

ECH 6844 Chemical Engineering Calculations.
Credits: 2

ECH 6845 Models and Methods. W.
Credits: 3

ECH 6846 Multidimensional and Discrete Systems. F.
Credits: 3

ECH 6847 Applied Field Theory.
Credits: 3

ECH 6848 Applied Statistics and Probabilistic Systems.
Credits: 3

ECH 6849 Advances in Numerical and Analytical Computation.
Credits: 3

ECH 6905 Individual Work.
Credits: 1 to 9

ECH 6910 Supervised Research.
Credits: 1 to 5††

ECH 6926 Graduate Seminar. F, W, S.
Credits: 1

ECH 6936 Advanced Seminar in Chemical Engineering.
Credits: 2. Maximum of 6 credits.

ECH 6937 Special Topics in Chemical Engineering 1.
Credits: 1 to 6. Maximum of 12 credits.

ECH 6939 Special Topics in Chemical Engineering 3.
Credits: 1 to 6. Maximum of 12 credits.

ECH 6940 Supervised Teaching.
Credits: 1 to 5††

ECH 6971 Master's Research.
Credits: 1 to 15††

ECH 7938 Special Topics in Chemical Engineering.
Credits: 1 to 6

ECH 7980 Doctoral Research.
Credits: 1 to 15††

CHEMISTRY

College of Arts & Sciences

INSTRUCTIONAL STAFF 1977-78

Ohrn, N.Y., Chairman; Bates, R.G.; Battiste, M.A.; Baxter, J.F.; Brey, W.S., Jr.; Brown, H.C.; Butler, G.B.; Colgate, S.O.; Deyrup, J.A.; Dolbier, W.R., Jr.; Dresdner, R.D.; Eyler, J.R.; Gabbay, E.J.; Hanrahan, R.J.; Helling, J.F.; Hogen Esch, T.E.; Jones, W.M.; King, R.W.; Laitinen, H.A.; Li, K.P.; Lowdin, P.O.; Micha, D.A.; Muga, M.L.; Muschlitz, E.E., Jr.; Myers, G.H.; Palenik, G.J.; Person, W.B.; Reid, C.E.; Ryschkewitsch, G.E.; Schmid, G.M.; Sisler, H.H.; Stoufer, R.C.; Tarrant, P.; Vala, M.T.; VanderWerf, C.A.; Weltner, W., Jr.; Winefordner, J.D.; Zoltewicz, J.A.

All *Chemistry Majors* must complete at least the following *Minimum Program* (which may include equivalent transfer course work): CHM 2041C-2042C-2043C or CHM 2045C-2046C-2047C or CHM 2050C-2051C-2052C or CHM 2055C-2056C and CHM 3120C and CHM 3210-3210L-3211-3211L and CHM 3400-3401-3401L-4130-4130L or CHM 3400-3401-3401L-4131-4131L or CHM 4410-4411-4411L-4412. An identical number of credits in CHM 4740L may be substituted for CHM 3401L-3211L-4130L-4131L and/or 4411L.

Completion of the above courses and their prerequisites and a general physics sequence will satisfy the minimum requirements of the College of Arts and Sciences for a major in chemistry. Any language acceptable to the College of Arts and Sciences is appropriate for this minimum program.

A.C.S. Certified Program: To receive American Chemical Society certification and an adequate preparation for the profession, a student should obtain credit for CHM 2041C-2042C-2043C or CHM 2045C-2046C-2047C or CHM 2055C-2056C; CHM 3120C; CHM 3210-3210L-3211-3211L; CHM 4130-4130L or CHM 4131-4131L; CHM 4410-4411-4411L-4412; CHM 4740L (1 credit); CHM 4610 or CHM 5300; CHM 4380 or CHM 4230; and six additional hours of advanced chemistry including at least one laboratory course. Corresponding honors courses may be substituted. Note that additional credit in CHM 4740L may be substituted for CHM 3211L, 4130L, 4131L and/or CHM 4411L on a credit-for-credit basis.

The language requirement must be met in German, French or Russian. The student is advised, when possible, to complete the following or their equivalent during the first two years: six quarters of chemistry, PHY 2040-2040L-2041-2041L-2042-2042L, MAC 3311-3312-3313 and MAP 3302.

Preprofessional students: (pre-med, pre-dent., etc.) Normally complete the minimum program and additional courses chosen with the help of the adviser. They are also normally advised to obtain credit for MAC 3311-3312-3313, PHY 2050-2050L-2051-2051L-2052-2052L or PHY 2040-2040L-2041-2041L-2042-2042L, PCB 3253 and 5745. Any language acceptable to the College of Arts and Sciences is appropriate for the minimum program and preprofessional requirements.

Premedical and predental students are advised to *not* take CLEP exams in physical sciences, biological sciences, and fundamental mathematics as these would generate credits below the level at which such students would normally be taking courses. In a competitive program it is important to present a sound overall record. Those choosing to take CLEP exams in English, humanities, and social sciences should also complete some additional course credits in these areas above the general education level.

Chemistry Education Program: Students wishing to receive a degree in Chemistry through the College of Arts and Sciences while simultaneously obtaining accreditation for teaching secondary school chemistry should complete the minimum program above and the following education courses: EDF 3135; EDF 3514 or 3604 or 4542 or 4710; ESE 4011; ESE 4210; SCE 4330; ESE 4943. A maximum of 24 credits of this 40 credits of education work may count toward the 90 credit A & S upper division requirement. Students must make applications for admission to the several phases of the Teacher Education Program as outlined in the College of Education section of this catalog.

For additional information, see College of Arts and Sciences Entrance requirements or Dr. G.H. Myers in 340 Leigh Hall.

Baccalaureate Honors: Honors will be awarded to chemistry majors who earn an overall upper division grade point average of 3.3 or higher and a 3.3 average or higher in all chemistry work attempted, exclusive of CHM 4910, complete CHM 4610, 4230, 4380, or any 5000 level chemistry course with at least a B grade, and complete a

††Grading is on a S-U basis only.

minimum of 10 quarter hours of CHM 4910 (Senior Research). In addition a thesis based on the research project must be presented to the department of chemistry along with the recommendation of the student's research supervisor. This thesis must contain both discussion and experimental results. The research will normally be carried out under the direction of a member of the chemistry faculty. With departmental approval, a problem that is chemical in nature may be conducted outside the chemistry department. The student should see Dr. J.A. Deyrup in 328A Chemistry Research Building to obtain approval for this option.

Entry into this honors program requires prior agreement between the student and his proposed research supervisor on the nature and duration of the research project.

The following exceptions to the general rule for course equivalencies may be of interest to transfer students: 1. All courses in the 900-999 series must be evaluated individually. 2. Sequences of courses are equivalent as a *whole*. The individual courses having the same number within the sequences are not necessarily equivalent. They must be evaluated on an individual basis.

General Chemistry: The following general chemistry sequences are offered: CHM 1020-1021, CHM 2040-2041C-2042C-2043C, CHM 2045C-2046C-2047C, CHM 2050C-2051C-2062C, CHM 2055C-2056C.

CHM 1020-1021 is a terminal course not open to science and engineering students.

CHM 2040-2041C-2042C-2053C is a rigorous four quarter sequence open to all students. If a student elects this sequence in preference to others, the student is committed to remain in this sequence to complete the general chemistry requirement. This course is similar in course content to CHM 2045C-2046C-2047C but proceeds at a slower pace. It is designed for students with a weaker background in high school chemistry and who score under 1080 on the Scholastic Aptitude Test (SAT).

CHM 2045C-2046C-2047C is *recommended* for but not necessarily *limited* to students who have an adequate background in chemistry, mathematics and physics. A minimum score of 85 (530 SAT) on the mathematics portion of the Florida 12th grade testing program and a minimum total score of around 420 in the five divisions of the same test (or 1080 SAT) can be considered as a guide in counseling. This course is open to any student who has the motivation and enjoys the challenge of a mainstream general chemistry course.

CHM 2050C-2051C-2052C is the general chemistry honors sequence for which students may enroll only through the invitational honors program, or with the special permission of the Department of Chemistry.

CHM 2055C-2056C is a two quarter accelerated general chemistry sequence. It is open to all students who intend to register for organic chemistry CHM 3210-3211, or other advanced chemistry courses. By taking this sequence a student can complete the preprofessional requirement — medicine, dentistry, pharmacy, veterinary medicine, certain areas of engineering — much more rapidly and leave time for desired electives. This course covers the equivalent of the topical matter in each of the other general chemistry courses. *Freshmen*, who intend to register for this sequence should have scored over 1120 in the SAT with not less than 560 on the Mathematics or English portion of the test.

Transfer students from out of state or from Florida Community Colleges who have had some previous chemistry should consult with the General Chemistry Office before attempting to register for a general chemistry course. Questions relating to the general chemistry program should be directed to the General Chemistry Office in 242 Leigh Hall. Phone 392-0558. Chemistry majors should consult with Dr. G.H. Myers in 340 Leigh Hall.

Most transfer students who have completed one semester or one or two quarters at another university or community college should register for the CHM 2040 sequence, rather than CHM 2045C or CHM 2055C sequence.

Generally, students trying to choose between the various sequences are advised that primarily English and Mathematics scores are much more meaningful than science scores in beginning chemistry. A student with an English score below 500 in the SAT will face difficulties in any of the sequences.

Honors Courses: The chemistry department offers honors sequences paralleling its 2000 and 3000 level courses which offer superior students smaller classes and a more individualized and intensive educational opportunity. The various honor sequences are not prerequisite for each other—for example, one may apply for Organic Chemistry Honors after having completed any of the General Chemistry sequences. Students with above average performance records are encouraged to apply for enrollment in these courses. A number of 4000 level courses are offered each year which are appropriate for Junior and Senior students. Seniors may also apply to take graduate (5000 and 6000 level) courses. Because of the size of the department and its active graduate program, a wide variety of opportunities exists for undergraduates to take advanced level coursework and to conduct research.

Priority System: In instances where the demand for enrollment exceeds the capacity of the available facilities and chemistry staff, a priority system will be used. The system favors those students making satisfactory progress through a particular course sequence. First priority will be given to students attempting to register for a course for the first time and, for second and subsequent courses, to those who have completed the preceding course with a grade of C or better. Second priority will be given to students repeating a course and to those who have completed the preceding course with a grade of D. Whenever this system needs to be implemented only students with first priority will be permitted to add on the first day of the drop/add period on a space available basis. In extreme cases it may be necessary to displace previously registered students with second priority.

Chemistry

CHM 1020 Chemistry and Society. W.
Credits: 4
The first half of the CHM 1020-1021 sequence. A teriminal course for non-science students that presents chemistry and its relation to, and effects on, modern society. Topics in inorganic, organic, bio and environmental chemistry.

CHM 1021 Chemistry and Society. S.
Credits: 4
The second half of CHM 1020-1021.

CHM 2040 Introductory General Chemistry. F, W, SS.
Credits: 4; Prereq: MAC 1132 or equivalent required.
The first quarter of the CHM 2040-2041C-2042C-2043C sequence. An introduction to the elementary principles of modern chemistry, including concepts of science, stoichiometry, atomic and molecular structure, and chemical bonding. Designed for students who require or prefer a slower pace than that followed in the sequence that begins with CHM 2045C. Unless a student has taken three years of high school mathematics and achieved a score of 530 or higher in the mathematics portion of the SAT, it is required that MAC 1132 be taken prior to this course. This course is to be followed by CHM 2041C but this will be allowed only if a grade of "C" or better has been earned in CHM 2040.

CHM 2041C General Chemistry. W, S.
Credits: 4; Prereq: CHM 2040 or its equivalent with a grade of C or better.
The second quarter of the CHM 2040-2041C-2042C-2043C sequence. Principles of chemistry, the gaseous, liquid, and solid states, solutions and their colligative properties, and chemical kinetics. Related laboratory experiments.

CHM 2042C General Chemistry and Qualitative Analysis. F, S, SS.
Credits: 4; Prereq: CHM 2041C.
Third quarter of the CHM 2040-2041C-2042C-2043C sequence. Principles of chemical equilibrium, acids and bases, oxidation/reduction reactions, chemistry of the pre-transition metals. Laboratory experiments in chemical equilibrium and qualitative analysis of cations and anions.

CHM 2043C General Chemistry and Qualitative Analysis. F, W, SS.
Credits: 4; Prereq: CHM 2042C.
Final quarter of the CHM 2040-2041C-2042C-2043C sequence. Chemistry of transition and post-transition metals, complex ions, non-metals, introduction to organic chemistry. Laboratory experiments involving the separation and detection of cations in aqueous solution.

CHM 2045C General Chemistry. F, W.
Credits: 4
It is *recommended* that students who enroll for this course have an adequate background in high school chemistry, mathematics and some physics. As a guide the student should have achieved a score of around 530 on the mathematics portion of SAT and a combined score of 1080 in SAT.

Students who have never enrolled for CHM 2040 or its equivalent or who have had no chemistry for a number of years should not enroll in this course without consulting the General Chemistry Office. If there is any doubt of the student's fitness for this course the General Chemistry Office in 242 Leigh Hall should be consulted. First quarter of the CHM 2045C-2046C-2047C sequence: Principles of chemistry, atomic and molecular structure, chemical bonding, stoichiometry, the properties and structure of gases, liquids and solids. Related laboratory experiments.

CHM 2046C General Chemistry and Qualitative Analysis. W, S.
Credits: 4; Prereq: CHM 2045C.
Second quarter of the CHM 2045C-2046C-2047C sequence. Continuation of chemical principles, solutions and their colligative properties, chemical kinetics, chemical equilibrium and electrochemistry; the descriptive chemistry of some elements. Related laboratory experiments in acid-base chemistry and qualitative analysis of some cation and anions.

CHM 2047C General Chemistry and Qualitative Analysis. S, SS.
Credits: 4; Prereq: CHM 2046C.
Third quarter of the CHM 2045C-2046C-2047C sequence. Systematic chemistry of the metals and non-metals, the chemistry of complex ions, elements of organic chemistry. Qualitative analysis of selected cations and anions.

CHM 2050C General Chemistry Honors. F.
Credits: 4
First course of the sequence CHM 2050C-2051C-2052C which has the same goals as the sequence CHM 2045C-2046C-2047C, but is open mainly to students with a very good background, who desire a chemistry course with more depth. Enrollment in this course is acheived only through the *invitational honors program* or with the permission of the department of chemistry. This course is offered in the Fall quarter, only.

CHM 2051C General Chemistry Honors. W.
Credits: 4; Prereq: CHM 2050C or special permission of the department of chemistry.
Second quarter of the CHM 2050C-2051C-2052C sequence.

CHM 2052C General Chemistry Honors. S.
Credits: 4; Prereq: CHM 2051C.
Third quarter of the sequence CHM 2050C-2051C-2052C.

CHM 2055C Chemical Principles. F.
Credits: 5
Open to students who need to take more than a course in general chemistry. This sequence allows the well motivated student to complete general, analytical and organic chemistry in 5 quarters. It is recommended for students majoring in chemistry, certain chemistry oriented areas of engineering, zoology, pharmacy and premedical, predental, preveterinary medical students. The topical material in the CHM 2055C-2056C sequence is similar to that covered in the other general chemistry sequences.

CHM 2056C Principles of Chemistry and Qualitative Analysis. W.
Credits: 5; Prereq: CHM 2055C (No exceptions).
The second quarter of the sequence CHM 2055C-2056C. A continuation of chemical principles and the chemistry of the metals and non-metals. The laboratory will emphasize the qualitative analysis of various cations and anions.

CHM 3120C Quantitative Analysis. F, W, S, SS.
Credits: 5; Prereq: CHM 2043C or 2047C or 2052C or 2056C.
Principles and laboratory techniques involved in quantitative analysis. Topics include: acid-base equilibria and titrations; precipitation and complex formation; oxidation-reduction; statistical treatment of data; sampling methods.

CHM 3200 Organic Chemistry. F, SS.
Credits: 4; Prereq: CHM 2043C, 2047C, 2052C, or 2056C.
A brief elementary course embracing the more important aliphatic and aromatic compounds. (This lecture course may not be taken without the corresponding laboratory course without permission of the Chairman of the Chemistry Department, unless the student is majoring in physics or chemical engineering.)

CHM 3200L Organic Chemistry Laboratory. F, SS.
Credits: 2; Coreq: CHM 3200.
Organic laboratory experiments to accompany CHM 3200.

CHM 3210 Organic Chemistry. F, W, S, SS.
Credits: 4: Prereq: CHM 2043C, 2047C, 2052C or 2056C, or equivalent. Complete 1 year college
The first half of the CHM 3210-3211 sequence. A study of the structures, syntheses and reactions of organic compounds.

CHM 3210L Organic Chemistry Laboratory. F, W, S, SS.
Credits: 1; Prereq: CHM 3210.
Organic Laboratory experiments to following CHM 3210.

CHM 3211 Organic Chemistry. F, W, S, SS.
Credits: 3; Prereq: CHM 3210.
The second half of the CHM 3210-3211 sequence.

CHM 3211L Organic Chemistry Laboratory. F, W, S, SS.
Credits: 2; Prereq: CHM 3210L.
Organic Lab.

CHM 3215 Organic Chemistry— Honors. F, W.
Credits: 4; Coreq: CHM 3210L. Prereq: three quarters of college chemistry or its equivalent and consent of instructor.
This course will cover the subject material of CHM 3210 in greater depth.

CHM 3216 Organic Chemistry — Honors. W, S.
Credits: 3; Prereq: CHM 3215. Coreq: CHM 3211L.
This course will cover the subject material of CHM 3211 in greater depth.

CHM 3219 Organic Chemistry. SS.
Credits: 9, Prereq: CHM 2043C, 2047C, 2052C, 2056C, 232 or equivalent. Complete 1 year college chemistry course including Qualitative Analysis; Coreq: CHM 3210L and 3211L.
A study of the structures; reactions and synthesis of organic compounds. CHM 3219 with CHM 3210L and 3211L constitute a complete organic chemistry course and as such, are suitable for students majoring in Chemistry, certain chemistry oriented areas of Engineering, Zoology, Pharmacy, and premedical, predental, preveterinary medical students. The topical material covered in CHM 3219 is essentially identical to that covered in CHM 3210 and 3211.

CHM 3400 Physical Chemistry. F, W, S.
Credits: 4; Prereq: CHM 3120, MAC 3312. Coreq: CHM 3210 or 3200.
The first half of the course CHM 3400-3401. Properties of solutions, chemical equilibrium, pH, the colloidal state; particular emphasis on biochemical applications. Designed primarily for students of medicine, pharmacy, biology and related fields.

CHM 3401 Physical Chemistry. W, S, SS.
Credits: 3; Prereq: CHM 3400.
The second half of the course CHM 3400-3401.

CHM 3401L Physical Chemistry Laboratory. W, S, SS.
Credits: 1; Coreq: CHM 3401.
A series of laboratory experiments designed to accompany CHM 3401.

CHM 4060 Chemistry Literature. F.
Credits: 1; Prereq: 3 years of chemistry.
A reading knowledge of French and German is desirable. The present sources of published chemical information.

CHM 4130 Instrumental Analysis. W, SS.
Credits: 3; Prereq: CHM 3120 or its equivalent, MAC 3312 and PHY 2051 or equivalent.
Principles and laboratory techniques involved in electrochemical methods of analysis and in chromatographic separation.

CHM 4130L Instrumental Analysis Laboratory. F, S.
Credits: 2; Prereq: CHM 4130, no exceptions; MAC 3312 and PHY 2051.
Principles and laboratory techniques involved in electrochemical methods of analysis.

CHM 4133 Instrumental Analysis. F, S.
Credits: 3; Prereq: CHM 3120 or its equivalent, MAC 3312 and PHY 2051 or equivalent.
Principles and laboratory techniques involved in chromatographic separation and emission and absorption spectrochemical methods of analysis.

CHM 4133L Instrumental Analysis Laboratory. W, SS.
Credits: 2; Prereq: CHM 4133, no exceptions, MAC 3312 and PHY 2051 or equivalent.
Principles and laboratory techniques involved in chromatographic separation and emission and absorption spectrochemical methods of analysis.

CHM 4230 Organic Chemistry. S.
Credits: 3; Prereq: CHM 3211.
Characterization and structure proof of organic compounds by spectral methods, including IR, UV, NMR and mass spectrometry.

CHM 4230L Organic Chemistry Laboratory. S.
Credits: 2, Prereq: CHM 3211L, Coreq: CHM 4230.
The qualitative identification of organic compounds through the combined use of spectroscopic and chemical methods.

CHM 4380 Current Topics in Organic Chemistry. F.
Credits: 3; Prereq: CHM 3211.
Modern synthetic reactions, molecular rearrangements, elements of physicalorganic chemistry, heterocyclic compounds, organic chemistry of the second row elements, natural products, pericyclic reactions, free radical chemistry, and photochemistry.

CHM 4410 Physical Chemistry. W.
Credits: 3; Prereq: PHY 2042. Coreq: MAP 3302.
Introduction to quantum theory, atomic and molecular structure, chemical bonding.

CHM 4411 Physical Chemistry. F.
Credits: 4; Prereq: PHY 2042. Coreq: MAP 3302.
Chemical thermodynamics, solutions, homogeneous and heterogeneous equilibria, electrochemistry.

Note CHM 4410 and CHM 4411 may be completed in either order, although it is recommended that CHM 4411 be taken first.

CHM 4411L Physical Chemistry Laboratory. F, W, S.
Credits: 2; Prereq: either CHM 4410 or 4411.
A series of laboratory experiments designed to accompany CHM 4410-CHM 4411.

CHM 4412 Physical Chemistry. S.
Credits: 3; Prereq: CHM 4410 and 4411.
Chemical statistics, kinetic theory, chemical kinetics.

CHM 4412L Physical Chemistry Laboratory. S.
Credits: 2; Prereq: CHM 4411L. Coreq: CHM 4412.
A series of laboratory experiments designed to accompany CHM 4412.

CHM 4610 Inorganic Chemistry. S.
Credits: 4; Prereq: 13 quarter hours 3000 level or higher chemistry courses including either CHM 3400 or CHM 4410.
Periodic properties and reactivities of the elements. Inorganic stereochemistry. Ionic compounds and the crystalline state. Acid-base chemistry.

CHM 4740L Integrated Laboratory. F, W, S, SS.
Credits: 1 to 5; Prereq: CHM 3120 and 3210L or equivalent.
A course designed to present a unified approach to advanced organic, physical-chemical, and instrumental analytical laboratory techniques. Laboratory program may be tailored to the student's requirements. May be repeated for additional credit.

CHM 4905 Individual Problems. F, W, S, SS.
Credits: 2 to 5; Prereq: permission of the faculty member supervising the work.
May be repeated for additional credit. Double registration permitted. An assigned reading program or the development of an assigned experimental problem.

CHM 4910 Senior Research. F, W, S, SS.
Credits: 2 to 5; Prereq. or Coreq: CHm 4060. Senior standing and consent of instructor.
Laboratory or literature investigations of chemical problems of current interest. May be repeated for additional credit.

GRADUATE COURSES
Chemistry

CHM 5157 Analytical Processes.
Credits: 4. Prereq: CHM 3120C and 4411.

CHM 5235 Organic Spectroscopy. F.
Credits: 3; Prereq: CHM 3211.

CHM 5272 The Organic Chemistry of Polymers. W.
Credits: 3; Prereq: CHM 3210, 3200 or equivalent.

Descriptions

CHM 5300 Chemistry of Biological Molecules. S.
Credits: 4; Prereq: Organic Chemistry CHM 3211 or 3216 and Physical Chemistry CHM 4412 or CHM 3401 or consent of instructor.

CHM 5413L Advanced Physical Chemistry Laboratory. SS.
Credits: 3; Prereq: CHM 4412L.

CHM 5511 The Physics and Physical Chemistry of Polymers. S.
Credits: 3; Prereq: CHM 411 or equivalent.

CHM 5514 Chemical Computation. SS.
Credits: 3; Prereq: CHM 4412 and a knowledge of FORTRAN Programming.

CHM 5905 Individual Problems, Advanced. F, W, S, SS.
Credits: 3 to 5;†† Prereq: permission of the faculty member supervising the work.

CHM 6140 Advanced Research Techniques in Chemistry.
Credits: 2 to 5

CHM 6153 Electrochemical Processes.
Credits: 1 to 5

CHM 6154 Chemical Separations.
Credits: 3

CHM 6155 Atomic and Molecular Spectroscopy.
Credits: 3

CHM 6158L Advanced Instrumental Analysis Laboratory.
Credits: 4

CHM 6180 Special Topics in Analytical Chemistry.
Credits: 2. Maximum of 12 credits.

CHM 6190 Analytical Chemistry Seminar.
Credits: 1

CHM 6225 Advanced Organic Chemistry.
Credits: 3

CHM 6226 Advanced Organic Chemistry.
Credits: 3

CHM 6227 Advanced Organic Chemistry.
Credits: 3

CHM 6242 Free Radical Reactions.
Credits: 2

CHM 6251 Organometallic Compounds.
Credits: 3

CHM 6260 Physical-Organic Chemistry.
Credits: 2

CHM 6270 The Chemistry of Heterocyclic Compounds.
Credits: 2

CHM 6271 Chemistry of High Polymers.
Credits: 2

CHM 6271L High Polymer Chemistry Laboratory.
Credits: 2

CHM 6381 Special Topics in Organic Chemistry.
Credits: 2

CHM 6390 Organic Chemistry Seminar.
Credits: 1

CHM 6430 Chemical Thermodynamics.
Credits: 3

CHM 6440 Advanced Chemical Kinetics.
Credits: 3

††Grading is on a S-U basis only.

CHM 6449 Photochemistry.
Credits: 3

CHM 6460 Kinetic Theory.
Credits: 3

CHM 6461 Statistical Thermodynamics.
Credits: 3

CHM 6470 Chemical Bonding and Spectra. 1.
Credits: 4

CHM 6471 Chemical Bonding and Spectra. 2.
Credits: 2 to 4

CHM 6480 Elements of Quantum Chemistry.
Credits: 3

CHM 6481 Quantum Theory of Matter 1.
Credits: 3

CHM 6482 Quantum Theory of Matter 2.
Credits: 3

CHM 6483 Quantum Theory of Matter 3.
Credits: 3

CHM 6490 Introduction to Molecular Spectroscopy.
Credits: 3

CHM 6510 Physical Chemistry of Surfaces.
Credits: 3

CHM 6512 The Physical Chemistry of Polymers.
Credits: 3

CHM 6513 Colloids.
Credits: 2

CHM 6515 Radiation Chemistry.
Credits: 2

CHM 6520 Chemical Physics.
Credits: 3

CHM 6580 Special Topics in Physical Chemistry.
Credits: 1 to 3. Maximum of 15 credits.

CHM 6590 Physical Chemistry Seminar.
Credits: 1

CHM 6620 Advanced Inorganic Chemistry.
Credits: 3

CHM 6622C Inorganic Preparations.
Credits: 5

CHM 6623 Chemistry of the Metals.
Credits: 3

CHM 6624 Chemistry of the Nonmetals.
Credits: 3

CHM 6680 Special Topics in Inorganic Chemistry.
Credits: 1 to 3. Maximum of 15 credits.

CHM 6690 Inorganic Chemistry Seminar.
Credits: 1

CHM 6710 Applied Molecular Spectroscopy.
Credits: 4

CHM 6720 Chemical Dynamics.
Credits: 4

CHM 6730 Chemical Transformations.
Credits: 4

CHM 6910 Supervised Research.
Credits: 1 to 5††

CHM 6935 Chemistry Colloquium.
Credits: 1 to 2††

CHM 6940 Supervised Teaching.
Credits: 1 to 5††

CHM 6971 Master's Research.
Credits: 1 to 15††

CHM 7485 Special Topics in Theory of Atomic and Molecular Structure.
Credits: 3

CHM 7498 Theory of Atomic and Molecular Structure.
Credits: 3

CHM 7980 Doctoral Research.
Credits: 1 to 15††

Chemistry - Specialized
GRADUATE COURSES

CHS 5110 Radiochemistry. S.
Credits: 3; Prereq: CHM 3401 or 4412, or consent of instructor.

CHS 5110L Radiochemistry Laboratory. S.
Credits: 2; Prereq: CHM 3120 and 3401 or 4412, or consent of instructor.

CHS 6120 Nuclear Chemistry.
Credits: 3

CIVIL ENGINEERING

College of Engineering

INSTRUCTIONAL STAFF 1977-78

Schaub, J.H., Chairman: Christensen, B.A.; Collier, C.A.; Coons, W.W.; Courage, K.G.; Davidson, J.L.; Furman, T.deS.; Gibson, D.W.; Hays, C.O.; Hedgecock, C.R.; Long, G.; Lybas, J.M.; Melville, J.G.; Mitrani, J.D.; Rumble, J.D.; Ruth, B.E.; Schmertmann, J.H.; Self, M.W.; Spangler, B.D.; Wattleworth, J.A.; Whitehead, W.J.; Zimpfer, W.H.

ADJUNCT AND AFFILIATE STAFF

Brooks, H.K.; Bryan, P.F.; Deere, D.U.; Eades, J.L.; Huber, W.C.; Mitrani, J.A.; Wisely, W.H.

Civil Engineering
Structures

CES 3103 Stress Analysis. W, S, SS.
Credits: 4; Prereq: CES 3123.
Deflection analysis of beams, frames and trusses by geometric and static methods. Analysis of statically indeterminate structures by consistent deformations, elastic center, and stiffness method.

CES 3123 Mechanics of Engineering Structures. F, W, S, SS.
Credits: 4; Coreq: EGM 3520.
Stress and strain analysis of statically determinate structures. Influence lines and criteria for maximum moments, shears, and reactions.

CES 4034 Structural Estimating. W, S.
Credits: 3; Prereq: Junior or Senior class standing.
Cost estimating for structures. Economic comparisons of competitive structural systems. Construction methods and scheduling as they affect cost estimates.

CES 4607 Analysis and Design in Steel. F, S.
Credits: 4; Prereq: ECI 3403, CES 3103.
Basic theory of design in structural steel. Design of members subjected to tension, compression and flexure. Design of connections.

CES 4704 Design of Reinforced Concrete. F.
Credits: 3; Prereq: CES 4705.
Continuation of CES 4705. Ultimate strength analysis and design involving torsion members of irregular section, and slabs, walls and footings. Building design.

CES 4705 Analysis and Design in Reinforced Concrete. F, W, S, SS.
Credits: 4; Prereq: CES 3103.
Ultimate strength analysis and design of reinforced concrete members. Flexural working stress

design. Analysis of frames by moment distribution. Influence lines. Introduction to frame design.

GRADUATE COURSES

CES 5305 Design of Structural Systems.
Credits: 3

CES 5325 Design of Highway Bridges.
Credits: 3

CES 5715 Design in Prestressed Concrete.
Credits: 3

CES 5726 Design of Concrete Systems.
Credits: 3

CES 5801 Design in Steel and Timber.
Credits: 3

CES 6106 Advanced Structural Analysis.
Credits: 3 to 6

CES 6108 Analysis of Statically Indeterminate Structures.
Credits: 3 or 6

CES 6136L Advanced Structural Laboratory.
Credits: 3

CES 6146 Matrix Methods in Structural Analysis.
Credits: 3 to 6

CES 6207 Topics in Structural Dynamics.
Credits: 3 to 6

CES 6516 Design of Framed Structures.
Credits: 3 to 6

CES 6526 Nonlinear Structural Analysis and Design.
Credits: 3 to 9

CES Nonlinear Structural Analysis and Design.
Credits: 3 to 9

CES 6551 Design of Folded Plates and Shells.
Credits: 3 to 6

CES 6616 Advanced Metal Structures.
Credits: 3

CES 6706 Advanced Reinforced Concrete.
Credits: 3 to 6

CES 6716 Advanced Prestressed Concrete Design.
Credits: 3

Engineering: Civil

ECI 2122 Civil Engineering Concepts. F, W, S.
Credits: 2; Prereq: MAC 3311.
Introduction to the basic problems, methodology and nomenclature of the subdisciplines of civil engineering.

ECI 3213 Hydraulics. F, W, S, SS.
Credits: 4; Prereq: EGM 3520, and MAP 3302.
Fluid properties and flow forms. Hydrostatic forces and stability of floating bodies. Basic flow equations with applications. Similitude, models and analogs. Pipe flow. Waterhammer. Pumps and turbines. Hydrometry.

ECI 3403 Civil Engineering Materials. F, W, S, SS.
Credits: 4; Prereq: EGM 3520.
A study of the principal materials used for engineering purposes with special attention to their mechanical properties and the importance of these properties to the engineer.

ECI 3515 Engineering Measurements. F, S.
Credits: 2; Coreq: MAC 3311.
Theory of Measurements. Sources of errors. Reliability, accuracy, percision, and probability of errors. Application to civil engineering.

ECI 4041 Computer Methods in Civil Engineering. F, W, S, SS.
Credits: 3; Prereq: Senior Status and EIN 3114.
Introduction to electronic digital computer programming, including various coding systems. Practice in machine solutions of civil engineering problems with Introduction to matrix algebra techniques.

ECI 4131 Construction Contracts and Specifications. W, SS.
Credits: 3; Prereq: Senior standing or permission of instructor.
Construction contracts, specifications and plans, principles of formulation and interpretation. Construction labor regulations; practice and trends.

ECI 4137 Civil Engineering Project Cost Analysis. F, S.
Credits: 3; Prereq: Junior or Senior class standing.
Civil engineering project finances. Theory and practice of cost analysis systems for Civil Engineering construction. Highway and heavy construction feasibility studies. Time value applications.

ECI 4145 Construction Methods and Management. F, S.
Credits: 4; Prereq: Junior or Senior class standing.
Theory and practice of construction operations, equipment utilization and construction methods. Analysis of costs. Optimizing crew and equipment. Heavy equipment costs.

ECI 4151 Practical Work in Civil Engineering. F, W, S, SS.
Credits: 1 to 5. Prereq: 4EG Classification.
One term industrial employment, including extra work according to a pre-approved outline. Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

ECI 4152 Creative Engineering. SS.
Credits: 3; Prereq: Senior standing in civil engineering.
The methodology of developing creative solutions to complex problems is explored. New and unusual engineering problems are addressed. Feasibility reports are prepared and presented.

ECI 4214 Hydraulics and Water Resources Engineering. F, W, S.
Credits: 4; Prereq: ECI 3213. Continuation of ECI 3213.
Open channel flow, hydraulic jump and backwater curves. Introduction to groundwater hydraulics, sedimentation, transient flow and planning and design of water resources systems.

ECI 4305 Soil Mechanics and Foundations. W, SS.
Credits: 4; Prereq: ECI 4314.
Subsurface exploration, settlement analysis, shearing resistance, earth pressure and an introduction to foundation design.

ECI 4314 Soil Mechanics. F, S.
Credits: 3; Prereq: GLY 2026 and ECI 3403.
Composition, physical and chemical properties of soil, compaction, flow of water through soil, distribution of stress within soil and consolidation.

ECI 4324 Foundation Design I. F, S.
Credits: 3; Prereq: ECI 4305 and CES 4705.
Foundation investigations, analysis and design of footings, pile and pile foundations, walls and sheet piling.

ECI 4514 Field Measurements. W, SS.
Credits: 3; Prereq: ECI 3515.
Familiarization with measuring instruments of civil engineering. Comparative evaluations. Applications to typical field problems.

ECI 4905 Special Problems in Civil Engineering. F, W, S, SS.
Credits: 1 to 6; Maximum of 12 credits. Prereq: Recommendation of Department Chairman.
Selected problems or projects in the student's major field of engineering study.

ECI 4935 Civil Engineering Seminar. F, S.
Credits: 1; Prereq: Senior standing in civil engineering.
Reports and discussion on civil engineering history, current developments, ethics, professionalism, registration, engineering organizations, publications and activities.

ECI 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: EG Classification.

GRADUATE COURSES

ECI 5045 Numerical and Computer Methods in Civil Engineering.
Credits: 3

ECI 5124 Civil Engineering Systems.
Credits: 4

ECI 5125 Construction Equipment and Procedures.
Credits: 3

ECI 5147 Construction Planning and Scheduling.
Credits: 3

ECI 5157 Civil Engineering Project Feasibility Analysis.
Credits: 3

ECI 5166 Legal Aspects of Civil Engineering.
Credits: 3

ECI 5186 Public Works Planning.
Credits: 3

ECI 5225 Problems in Hydraulics.
Credits: 3

ECI 5235 Open-Channel Hydraulics I.
Credits: 3

ECI 5265 Hydraulic Motors and Pumps.
Credits: 3

ECI 5317 Stress-Deformation Analysis of Soil Media.
Credits: 3

ECI 5325 Foundation Design II.
Credits: 3

ECI 5335 Soil Exploration for Engineering Design.
Credits: 3

ECI 5625 Geohydrology.
Credits: 3

ECI 6153 Civil Engineering Practice.
Credits: 3

ECI 6154 Civil Engineering Operations.
Credits: 3

ECI 6223 Computational Hydraulics I.
Credits: 3

ECI 6224 Computational Hydraulics II.
Credits: 3 to 6

ECI 6227 Hydraulic Models and Analogs.
Credits: 3

ECI 6228 Hydraulic Measurements in Laboratory and Field.
Credits: 3

ECI 6233 River Mechanics.
Credits: 3

CLASSICS

ECI 6234 Hydraulics of Stratified Flow.
Credits: 3

ECI 6236 Open-Channel Hydraulics 2.
Credits: 3

ECI 6237 Sediment Transport.
Credits: 3

ECI 6238 Hydraulic Transients.
Credits: 3

ECI 6316 Advanced Soil Mechanics.
Credits: 3 to 9

ECI 6326 Advanced Foundations.
Credits: 3 or 6

ECI 6346 Soil Dynamics.
Credits: 3 to 6

ECI 6356 Theory and Practice of Soil Compaction.
Credits: 3

ECI 6416 Properties, Design and Control of Concrete.
Credits: 4

ECI 6426 Bituminous Materials.
Credits: 4

ECI 6436 Structure and Engineering Properties of Soils.
Credits: 3 to 6

ECI 6575 Air Photo Interpretation: Engineering Applications.
Credits: 3

ECI 6576 Air Photo Interpretation: Terrain Analysis.
Credits: 4

ECI 6616 Groundwater Hydraulics.
Credits: 3

ECI 6905 Special Problems in Civil Engineering.
Credits: 1 to 9

ECI 6910 Supervised Research.
Credits: 1 to 5††

ECI 6936 Graduate Civil Engineering Seminar.
Credits: 1; max. of 3.

ECI 6940 Supervised Teaching.
Credits: 1 to 5††

ECI 6971 Master's Research.
Credits: 1 to 15††

ECI 6974 Master of Engineering or Engineer Degree Report.
Credits: 1 to 9

ECI 7980 Doctoral Research.
Credits: 1 to 15††

Engineering: Environmental

ENV 4404 Water Supply & Wastewater Removal. F, S.
Credits: 4
Source of supply quantity and quality requirements, collection, transmission and distribution of water. Collection, transportation and disposal of sewage and stormwater. Design of collection and distribution systems.

ENV 4514 Treatment of Water and Wastewater. W, SS.
Credits: 4
The chemical, physical and biological treatment of water and wastewater.

††Grading is on a S-U basis only.

ENV 4621 Water Resources Engineering. SS.
Credits: 3; Prereq: ECI 4214 or consent of instructor.
Introduction to the hydrologicical cycle. River engineering and design of artificial waterways. Navigation locks and introduction to dam and spillway design. Hydroelectric power generation. Pump and turbine selection.

GRADUATE COURSE

ENV 5625 Advanced Water Resources Engineering.
Credits: 3

Engineering: General

FGN 4822 Engineering and Public Works. W.
Credits: 3
For non-engineering students — A broad review of the nature and engineering aspects of the public services and facilities. Each public works function identified as to purpose and outlined as an engineering project. Problems in project development and interdisciplinary collaboration.

Transportation & Traffic Engineering

TTE 4007 Traffic and Transportation Engineering. F.
Credits: 4; Prereq: None.
Transportation characteristics and planning. Traffic characteristics, traffic studies, traffic control. Transportation systems.

TTE 4104 Highway Engineering. F, S.
Credits: 3; Prereq: ECI 3403 and ECI 4515.
Highway engineering practice, including organization, highway location, design, drainage, materials and construction.

GRADUATE COURSES

TTE 5006 Transportation Engineering.
Credits: 4

TTE 5105 Highway Design.
Credits: 3

TTE 5215 Traffic Engineering Characteristics.
Credits: 4

TTE 5257 Traffic Control Systems.
Credits: 4

TTE 5701 Geometric Design of Transportation Facilities.
Credits: 4

TTE 6106 Advanced Highway Engineering.
Credits: 3

TTE 6107 Highway Safety Analysis.
Credits: 3

TTE 6256 Traffic Engineering Operations and Analysis.
Credits: 4

TTE 6267 Traffic Flow Theory.
Credits: 4

TTE 6306 Mass Transport Systems.
Credits: 4

TTE 6307 Freeway Design and Operations.
Credits: 4

TTE 6516 Highway Planning Decisions.
Credits: 3

TTE 6526 Airport Planning and Operations.
Credits: 3

TTE 6606 Urban Transportation Models.
Credits: 3

CLASSICS

INSTRUCTIONAL STAFF

Schmeling, G.L., Chairman; Dickison, S.; Hartigan, K.; Miller, D.G.; Sussman, L.

An undergraduate major in Classics is interdisciplinary in nature with an emphasis on Greek, Latin, or a combination. An undergraduate is required to take 12 quarter hours of Greek or Latin above GRE 1122 or LAT 1122, or complete the three quarter beginning sequence in both GRE and LAT. In addition there is a requirement of 6 courses of the 2000 level or above (from any department) which deal with the ancient world, plus CLA 4935.

To graduate with departmental honors a student must attain a 3.5 average in his major (excluding courses below the 3000-level), and complete in his Senior year some special project approved as honors work.

Classical and Ancient Studies

(All courses indicated CLA or CLT are taught in English)

CLA 2700 Classical Archaeology. W.
Credits: 4; Prereq: None.
Illustrated lectures on archaeology, its processes of discovery and methods. History of major archaeological exploration in Mediterranean lands compared with extant literary information.

CLA 2930 Special Topics in Classical Civilization. F, W, S.
Credits: 4; Prereq: None
An examination of various aspects of Greek and Roman culture based on the ancient sources, literary and archaeological. With a change of topic, may be repeated for additional credit.

CLA 3501 Women in Classical Antiquity. W.
Credits: 4; Prereq: None.
The status of women in antiquity will be examined in light of modern thinking on the subject of women's roles in society.

CLA 3791 The Ancient City. F.
Credits: 4; Prereq: None.
An examination of the concepts and physical characteristics of Greek and Roman cities.

CLA 4905 Individual Study. F, W, S.
Credits: 4; Prereq: None.
Reading, conference, and reports. All work done in translation. May be repeated for additional credit with change of content.

CLA 4935 Classical Studies Program Seminar. F, W, S.
Credits: 4; Prereq: Completion of Classical Studies Program.

Classical Literature in Translation

CLT 2370 Myths of the Greeks and Romans. F, S.
Credits: 4; Prereq: None.
The development, importance, and influence of Greco-Roman Mythology. The main Greek and Latin literary sources read in translation.

CLT 2371 Religion of the Greeks and Romans. S.
Credits: 4; Prereq: None.
The development, importance, and influence of Greek and Roman religion and cult practice. The main literary and epigraphical sources read in translation.

CLT 3230 Ancient Novel. F.
Credits: 4; Prereq: None.
The origin, development, and influence of the ancient novel (1st to 4th century A.D.). Petronius, Apuleius, Longus, and others, read in translation.

CLT 3291 Greek Drama. W.
Credits: 4; Prereq: None.
The Classical Greek theatre. Archaeological remains of important theatres. Selected plays of Aeschylus, Sophocles, Euripides, Aristophanes and Menander read in translation.

CLT 3340 Greek and Roman Epic. S.
Credits: 4; Prereq: None.
The origin, development, and importance of ancient epic. Emphasis on Homer and Vergil, read in translation.

CLT 4905 Individual Study. F, W, S.
Credits: 4; Prereq: None.
Reading, conference and reports. With change of content, may be elected for additional credits. All work done in translation.

Greek Language

GRE 1120 Beginning Greek 1. F.
Credits: 5; Prereq: None.

GRE 1121 Beginning Greek 2. W.
Credits: 5; Prereq: GRE 1120, grade of C or better, or S, or equivalent work.

GRE 1122 Beginning Greek 3. S.
Credits: 5; Prereq: GRE 1121, grade of C or better, or S, or equivalent work.

Greek Literature (Writings)

GRW 2250 New Testament Greek. S.
Credits: 4; Prereq: Some knowledge of Greek and consent of the instructor.
Review of grammar and forms. Readings from several books of the New Testament.

GRW 3100 Survey of Greek Literature 1. F.
Credits: 4; Prereq: GRE 1122 or equivalent.
Study of representative texts of the fifth century B.C.

GRW 3101 Survey of Greek Literature 2. W.
Credits: 4; Prereq: GRE 1122 or equivalent.
Study of representative texts of the fifth century B.C., frequently drama.

GRW 3102 Survey of Greek Literature 3. S.
Credits: 4; Prereq: GRE 1122 or equivalent.
Study of representative texts from various periods of Greek literary history.

GRW 4905 Individual Work. F, W, S.
Credits: 4; Prereq: GRE 1122 or equivalent.
Reading, conference and reports. With change of content, may be elected for additional credit.

Health Science

HSC 2531 Health and Life Sciences Terminology.
Credits: 4; Prereq: None.
An intensive study of Greek and Latin word roots, suffixes and prefixes, and how they are used and combined to form the specialized vocabulary of the various health and life sciences.

Hebrew

HEB 1100 Beginning Hebrew 1. F.
Credits: 5; Prereq: None.

HEB 1101 Beginning Hebrew 2. W.
Credits: 5; Prereq: HEB 1100 or equivalent.

HEB 1102 Beginning Hebrew 3. S.
Credits: 5; Prereq: HEB 1101 or equivalent.

HEB 3230 Intermediate Hebrew 1. F.
Credits: 4; Prereq: HEB 1102 or equivalent.

HEB 3231 Intermediate Hebrew 2. W.
Credits: 4; Prereq: HEB 1102 or equivalent.

HEB 3232 Intermediate Hebrew 3. S.
Credits: 4; Prereq: HEB 1102 or equivalent.

Latin (Language Study)

LAT 1120 Beginning Latin 1. F.
Credits: 5; Prereq: None.

LAT 1121 Beginning Latin 2. W.
Credits: 5; Prereq: LAT 1120 (grade of C or better, or S) or equivalent work.

LAT 1122 Beginning Latin 3. S.
Credits: 5; Prereq: LAT 1121 (grade of C or better, or S) or equivalent work.

LAT 3230 Survey of Latin Literature 1. F.
Credits: 4; Prereq: LAT 1122 or equivalent work (e.g., 2-3 yrs. high school Latin).
Study of representative classical Roman poets (for example, Catullus, Ovid, or Tibullus).

LAT 3231 Survey of Latin Literature 2. W.
Credits: 4; Prereq: Same as for LAT 3230.
Study of representative classical Roman prose authors (for example, Cicero, Sallust, or Livy).

LAT 3232 Survey of Latin Literature 3. S.
Credits: 4; Prereq: Same as for LAT 3230.
Study of texts representing major classical Roman literary genres (for example, comedy, satire, lyric Poetry, history, oratory, or elegy).

GRADUATE COURSE

LAT 6840 History of the Latin Language.
Credits: 5

Latin Literature

LNW 4905 Special Study in Latin. F, W, S.
Credits: 4; Prereq: LAT 1122, LAT 3212 or equivalent.
Readings, conferences, and reports. With change of content may be elected for additional credit.

GRADUATE COURSES

LNW 5905 Special Study in Latin.
Credits: 4

LNW 6902 Special Study in Latin Literature.
Credits: 5

LNW 6905 Individual Work.
Credits: 3 to 5

LNW 6910 Supervised Research.
Credits: 1 to 5††

LNW 6940 Supervised Teaching.
Credits: 1 to 5††

LNW 6971 Master's Research.
Credits: 1 to 15††

CLINICAL AND COMMUNITY DIETETICS
College of Health Related Professions

INSTRUCTIONAL STAFF 1977-78

Emerson, A.P., Program Director; Browning R.A.; Dale, M.S.; Paulk, J.; Perkin, J.; Stapell, C.

See also courses under Health Related Professions (HRP).

Dietetics

DIE 3124 Principles of Dietetic Management. W.
Credits: 4
Basic principles of management, computer science, economics and industrial engineering as applied to the management field in dietetics.

DIE 4126 Food Systems Management. SS.
Credits: 4; Prereq: FOS 3042, DIE 3124 and HUN 3221.
Aspects of quantity food service systems; technological developments; management and physical facilities. Modules coordinated with DIE 4175.

DIE 4175 Practicum in Food Systems Management. SS.
Credits: 5; Prereq: DIE 3124. Coreq: DIE 4126.
Application of food systems management principles in patient service, personnel service, menu and recipe development, production, supportive services in the clinical setting of the teaching hospitals. Modules coordinated with DIE 4126.

DIE 4245 Nutrition and Disease. W.
Credits: 4; Prereq: HUN 4241. Coreq: DIE 4275.
Diseases related to nutrient intake; nutritional requirements created by diseases. These will be coordinated with analysis of diets used in medical treatments. Modules coordinated with DIE 4275.

DIE 4251 Clinical Dietetics. S.
Credits: 5; Prereq: HUN 4241, DIE 4245, DIE 4275 and DIE 4355. Coreq: DIE 4276.
Advanced course dealing with disorders of carbohydrate, amino acid, lipid, purine, pyrimidine, or metal metabolism; diseases of connective tissue, blood epithelial transport, or a deficiency of enzymes.

DIE 4275 Practicum in Nutrition and Disease. W.
Credits: 5; Prereq: HUN 4241; Coreq: DIE 4245 and DIE 4516.
Application of nutritional care in disease states in the clinical setting of the teaching hospitals. Patient care plans and case studies in medicine, surgery, pediatrics, clinical research and psychiatry.

DIE 4276 Practicum in Clinical Dietetics. S.
Credits: 5; Prereq: HUN 4241, DIE 4245, DIE 4275 and DIE 4355. Coreq: DIE 4251.
Clinical experience as a specialist member of the medical team. May elect clinical research, medicine, pediatrics, obstetrics-gynecology, geriatrics, psychiatry, renal medicine, endocrinology, cardiology, infectious diseases or related area.

DIE 4316 Community Dietetics. S.
Credits: 5; Prereq: HUN 4241, DIE 4245, DIE 4275 and DIE 4355. Coreq: DIE 4377.
Principles of nutritional care in outpatient clinics, outlying medical clinics, private clinics, child care centers and other special programs.

DIE 4355 Practicum in Nutrition Throughout the Life Span. F.
Credits: 5; Prereq: DIE 4126, DIE 4175. Coreq: HUN 4241.
Supervised practicum in local community dietetic programs.

DIE 4377 Practicum in Community Dietetics. S.
Credits: 5; Prereq: HUN 4241, DIE 4245, DIE 4275 and DIE 4355. Coreq: DIE 4316.
The clinical experiences in nutritional care in outpatient clinics, outlying medical clinics, private clinics, child care centers and other special programs.

DIE 4516 Clinical and Community Dietetics Seminar. W.
Credits: 4; Prereq: HUN 4241, DIE 4355. Coreq: DIE 4245 and DIE 4275. Permission of Program Director.
Selected readings and discussions of current developments in the field of clinical or community dietetics. Individual investigations and reports on assigned topics.

Human Nutrition

HUN 3122 Nutrition and Environmental Factors. F.
Credits: 4
A study of physiological requirements during the life cycle and how environmental factors such as economic status, technological change, age, race, education, religion and cultural and social customs influence the establishment of meal patterns and food habits.

††Grading is on a S-U basis only.

Descriptions

CLINICAL PSYCHOLOGY
College of Health Related Professions

INSTRUCTIONAL STAFF 1977-78

Perry, N.W., Jr., Chairman; Adams, J.; Barger, B.; Baum, E.; Belar, C.D.; Berg, W.K.; Blashfield, R.; Cohen, E.; Cohen, L.D.; Cunningham, W.R.; Davis, H.C., Jr.; Fischler, I.; Goldman, J.R.; Goldstein, M.; Hall, E.; Harrower, M.; Hielman, K.M.; Hornberger, R.H.; Johnson, S.B.; Levy, C.M.; McCaulley, M.H.; Mealiea, W.; Melamed, B.; Meyer, M.E.; Rasbury, W.C.; Rekers, G.; Rice, W.J.; Ross, J.; Satz, P.; Schlenker, B.; Schumacher, A.S.; Starr, D.L.; Van De Riet, V.; Webb, W.; Wells, A.

Clinical Psychology
GRADUATE COURSES

CLP 6375 Introduction to Clinical Psychology.
Credits: 4

CLP 6449 Life History Research in Psychopathology.
Credits: 4

CLP 6497 Psychological Disturbances of Adults.
Credits: 4

CLP 6905 Individual Work.
Credits: 1 to 5

CLP 6910 Supervised Research.
Credits: 1 to 5††

CLP 6940 Supervised Teaching.
Credits: 1 to 5††

CLP 6943 Practicum in Clinical Psychology.
Credits: 6, maximum 12††

CLP 6947 Advanced Practicum in Clinical Psychology.
Credits: 1-6, maximum 12††

CLP 6971 Masters Research.
Credits: 1 to 15††

CLP 7379 Psychodynamic Theory.
Credits: 4, maximum 8

CLP 7407 Special Issues, Methods and Techniques in Psychological Treatment.
Credits: 4

CLP 7408 Gestalt Therapy and Techniques.
Credits: 4

CLP 7427 Neuropsychological Assessment.
Credits: 4

CLP 7438 Selected Methods in Clinical Assessment.
Credits: 4

CLP 7468 Psychological Treatment with Groups.
Credits: 4

CLP 7488 Clinical Treatment of Adolescents.
Credits: 4

CLP 7936 Medical Psychology.
Credits: 4

††Grading is on a S-U basis only.

CLP 7938 Forensic Psychology.
Credits: 4

CLP 7942 Practicum in Behavior Therapy.
Credits: 4

CLP 7949 Internship.
Credits: 5

CLP 7980 Doctoral Research.
Credits: 1 to 15††

Community Psychology
GRADUATE COURSES

CYP 6709 Theory and Research in Community Clinical Psychology.
Credits: 4

Developmental Psychology
GRADUATE COURSES

DEP 6216 Psychological Disturbances of Children.
Credits: 4

DEP 7217 Minimal Brain Dysfunction.
Credits: 4

COASTAL AND OCEANOGRAPHIC ENGINEERING
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Chiu, T.Y.; Gondeck, A.R.; Mehta, A.J.; Partheniades, E.; Purpura, J.A.; Shemdin, O.H.; Sheppard, D.M.; Smutz, M.; Wang, Y.H.

Engineering: Ocean

EOC 5052 Ocean Engineering.
*Credits: 4**

EOC 5310 Acoustics in Fluids.
Credits: 4

EOC 5318 Introduction to Ocean Chemistry for Engineers.
Credits: 4

EOC 5860 Harbor Engineering.
Credits: 4

EOC 6196 Littoral Processes.
Credits: 4

EOC 6430 Coastal Structures 1: Theory.
Credits: 4

EOC 6431 Coastal Structures 2: Applications.
Credits: 4

EOC 6850 Simulation Techniques.
Credits: 4

EOC 6905 Individual Study in Coastal and Oceanographic Engineering.
Credits: 1 to 9

EOC 6910 Supervised Research.
Credits: 1 to 5††

EOC 6932 Selected Field and Laboratory Problems.
Credits: 3 to 8

EOC 6934 Advanced Topics in Coastal and Oceanographic Engineering.
Credits: 1 to 6

EOC 6939 Graduate Coastal Engineering Seminar.
Credits: 1††; maximum of 12.

EOC 6940 Supervised Teaching.
Credits: 1 to 5††

EOC 6971 Master's Research.
Credits: 1 to 15††

Oceanography

OCE 4016 Introduction to Coastal and Oceanographic Environment. F, S.
Credits: 4
Important marine and coastal process including relevant atmospheric and hydrological aspects. Introduction to oceanography and geophysical fluid motions; waves; tides; air-sea interaction; pollutant transport; littoral processes.

Oceanography: Physical

OCP 4290 Coastal Hydraulics. W.
Credits: 3; Prereq: OCE 4016 or consent of instructor.
Applications of fluid mechanics in the coastal zone. Inlet dynamics; surface and internal waves; sediment transport and deposition; laboratory techniques and measurements.

GRADUATE COURSES

OCP 6056 Physical Oceanography.
Credits: 4

OCP 6165 Ocean Waves 1: Linear Theory.
Credits: 4

OCP 6167 Ocean Waves 2: Nonlinear Theory.
Credits: 4

OCP 6169 Ocean Wave Spectra.
Credits: 4

OCP 6295 Estuarial Hydromechanics and Engineering 1.
Credits: 4

OCP 6296 Estuarial Hydromechanics and Engineering 2.
Credits: 4

OCP 6297 Estuarial Hydromechanics and Engineering 3.
Credits: 4

OCP 6555 Air-Sea Interaction 1: Microscale.
Credits: 4

OCP 6556 Air-Sea Interaction 2: Macroscale.
Credits: 4

COMMUNICATION
College of Journalism and Communications

INSTRUCTIONAL STAFF, 1977-78

Lowenstein, R.L., Dean; Butler, G.A.; Christiansen, K.A.; Davis, H.G.; Detweiler, J.S.; Edwardson, M.N.; Fregly, M.S.; Griffith, J.L.; Griggs, H.H.; Hopper, L.J.; Jacobs, A.J.; Jones, J.P.; Kendall, R.L.; Kent, K.E.M.; Pierce, F.N.; Pierce, R.N.; Pisani, J.R.; Terhune, J.L.; Weston, E.G.

Advertising
GRADUATE COURSES

ADV 6503 Creative Advertising Strategy and Consumer Behavior.
Credits: 4

ADV 6504 Advertising Research Problems.
Credits: 4

ADV 6602 Advertising/Public Relations Management.
Credit: 4

Communication
GRADUATE COURSES

COM 6315 Advanced Research Methods.
Credits: 4

COM 6940 Supervised Teaching.
Credits: 1 to 5††

Film
GRADUATE COURSES

FIL 6101 Advanced Radio, Television and Film Writing.
Credits: 4

Journalism
GRADUATE COURSES

JOU 6108 Investigative Reporting.
Credits: 4

JOU 6109 Urban Affairs Reporting.
Credits: 4

JOU 6190 Seminar in Problems of News Gathering and Presentation.
Credits: 4

JOU 6501 Newspaper Production and Management.
Credits: 4

JOU 6891 Seminar in Journalism Teaching.
Credits: 4

JOU 6892 Seminar in Journalism as Literature.
Credits: 4

Mass Media Communication
GRADUATE COURSES

MMC 6202 Seminar in Legal Problems of Mass Communication.
Credits: 4

MMC 6303 International Communication I.
Credits: 4

MMC 6304 International Communication II.
Credits: 4

MMC 6400 Mass Communication Theory.
Credits: 4

MMC 6421 Research Methods in Mass Communication.
Credits: 4

MMC 6560 Seminar in History of Mass Communication.
Credits: 4

MMC 6660 Seminar in Mass Communication and Society.
Credits: 4

MMC 6905 Individual Work
Credits: 1 to 5

MMC 6910 Supervised Research.
Credits: 1 to 5††

MMC 6920 Communication Colloquium.
Credits: 1††

MMC 6936 Special Topics in Mass Communication
Credits: 2 to 5

MMC 6971 Master's Research.
Credits: 1 to 15††

Public Relations
GRADUATE COURSES

PUR 6934 Problems in Public Relations.
Credits: 4

Radio-Television
GRADUATE COURSES

RTV 5603 Teaching Through Television.
Credits: 5

RTV 6503 Broadcast Program and Production Problems.
Credits: 4

RTV 6601 Radio and Television in Education.
Credits: 4

RTV 6801 Broadcast Station Management.
Credits: 4

COMPUTER AND INFORMATION SCIENCES

Intercollege Department

INSTRUCTIONAL STAFF 1977-78

Elliott, R.W., Chairman; Arroyo, A.A.; Chollet, G.F.; Davis, E.W.; Drew, M.S.; Gondeck, A.R.; Grant, J.H.; Hale, M.P., Jr.; Holzer, J.B.; Selfridge, R.G.; Su, S.Y.; Tou, J.T.; ,Vandenburgh, H.R.; Vickers, F.D.; Wessels, R.H.

General Information

The Intercollege Department of Computer and Information Sciences was created to serve the needs of the entire university. Toward this end several service courses are available as well as several degree programs. Bachelor Degree programs are currently available through the College of Arts and Sciences, the College of Business Administration, and the College of Engineering.

Program for CIS Majors in the College of Arts and Sciences.

The minimum requirements for a Bachelor's degree with a major in CIS from the College of Arts and Sciences are listed in the following paragraphs. In addition, the student must satisfy the general college requirements as described under the College of Arts and Sciences section of this catalog.

a. The student should complete in the lower division MAC 3311, 3312, 3313, MAS 3114, STA 4033, COC 3110, CDA 3101, COP 3530, COP 3550, and CNM 3110.

b. In the upper division the student should complete the following courses:

1. One of COP 3134, COP 3121.
2. One of COP 4400, COP 4112.
3. One of COP 4644, COP 4622, COP 4640.
4. One of CIS 4321, COP 4300, COP 4540.
5. One of CDA 4040, CDA 4041, CDA 4171. The student is urged to check with the instructor about the advisability of taking EEL 3701 before this course.
6. Eight credits of CIS electives. The student is urged to consult the CIS advisor before choosing these courses as some combinations will not satisfy the requirement.
7. CIS 4935 (1 credit).
8. CIS 4905 (4 credits). In addition to area requirements all students are required to take at least four hours of CIS 4905 during their senior year. All students will, as part of the registration process for CIS 4905, discuss and obtain approval prior to registration in CIS 4905 of all programming projects with the faculty member assigned to CIS 4905 the coming quarter. This faculty member will be responsible for the final grade.
9. COC 4400 or equivalent.

c. Minimum number of hours needed for CIS major in Arts and Sciences in CIS Department = 53.

Computer and Information Sciences Departmental Honors

To qualify for honors in Computer and Information Sciences a student must take two Computer and Information Sciences courses approved by the advisor over and above the regular degree requirements, he or she must attain an overall GPA of 3.5 in all Computer and Information Sciences coursework and must obtain a grade of A or B in all Computer and Information Sciences courses taken. In addition, the CIS 4905 (Special Problems in CIS) project must be an Honors Project to be presented in a public seminar. A student must petition and get approval to attempt CIS Honors at least two quarters before graduation.

Programs for CIS Majors in the College of Business Administration.

The student is referred to the College of Business Administration section of the catalog for the degree requirements in CIS under the College of Business Administration.

Programs for CIS Majors in the College of Engineering.

The student is referred to the College of Engineering section of the catalog for the degree requirements in CIS under the College of Engineering.

Computational/Numerical Methods

CNM 3100 Numerical Techniques. F, W, S, SS.
Credits: 2; Prereq: COP 3212; Coreq: MAP 3302.
Major techniques for solving problems quantitatively through the use of computers and computer programming languages. Numerical and computer solutions to elementary systems of algebraic equations and ordinary differential equations.

CNM 3110 Algorithms of Numerical Calculus. F, S.
Credits: 4; Prereq: COP 3530 and MAS 3114.
A study of many different algorithms designed to consider properties of global versus local convergence, with elementary error analysis, their implementation in different languages with emphasis on computer solution of problems.

CNM 4141 Error Analysis of Algorithms. W.
Credits: 4; Prereq: CNM 3110.
An introduction to error analysis of selected algorithms. Matrix techniques of error analysis and global versus local convergence.

Computer & Information Systems

CIS 4020 Information Resources in Science and Technology. W.
Credits: 3; Prereq: 36 hours in physical sciences, biological sciences, engineering, mathematics or CIS major.
Nature and scope of primary, secondary and informal sources. Problems in application of

††Grading is on a S-U basis only.

information search techniques. Directed experience in utilization of information resources.

CIS 4023 Non-Numeric Information Processing. S.
Credits: 4; Prereq: COP 3550.
Design and programming of non-numeric computer processing systems with emphasis on information retrieval, automatic translation, computer aided instruction and information construction.

CIS 4025 Information Retrieval. S.
Credits: 4; Prereq: COP 3530.
The structure and operation of information retrieval systems, including file organization, question analysis, search strategy, indexing languages, thesaurus constructions.

CIS 4300 Information Resources in Business and Economics. S.
Credits: 4; Prereq: Senior major in business, economics, or CIS.
Same description as for CIS 4020.

CIS 4302 Content Analysis, Specification, and Control.
Credits: 4; Prereq: One of CIS 4020 or CIS 4300.
Design, operation, and evaluation of indexing and abstracting systems. Problems in creating and using manual, mechanized and computerized systems. Required of IS majors.

CIS 4321 Introduction to Management Systems. W.
Credits: 4; Prereq: COP 3121.
A discussion of database management systems including system models, evaluation, analysis, and implementation techniques.

CIS 4905 Special Problems in CIS. F, W, S, SS.
Credits: 1 to 6
Problems in different areas of computer science, operating systems, management systems, and information retrieval. This course requires actual experience in developing and maintaining a system. May be repeated for a maximum of 12 hours.

CIS 4935 Seminar in CIS. F, W, S, SS.
Credits: 1 to 4; Prereq: Junior or Senior Standing in CIS. May be repeated.
A seminar in different Computer and Information Science topics.

CIS 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: 4EG Classification.
One term industrial employment, including extra work according to a pre-approved outline. Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

Computer Applications

CAP 3800 Statistical Data Processing. F, S.
Credits: 4; Recommended Prereq: One course in elementary statistics.
Techniques for coding and analysis of research data using SPSS (Statistical Package for the Social Sciences); introduction to U.S. Census computerized database and associated retrieval software. Computer solution of assigned problems by the student.

CAP 4621 Artificial Intelligence and Heuristics. S.
Credits: 4; Prereq: COP 3550.
Objectives of artificial intelligence. Self organizing systems. Learning systems. Game playing systems.

CAP 4721 Computer Graphics. S.
Credits: 4; Prereq: COP 3550.
Displays, storage and generation. Interactive versus passive graphics. Analog versus digital graphic storage. Pattern recognition. Projections and the hidden line problem.

Computer Concepts

COC 3110 Introduction to CIS. F, W, S, SS.
Credits: 4; Coreq: MAC 3311.
Introduction to computers and algorithms. Programming in a high level language. Topics include loops, arrays, and procedures. Structured programming techniques.

COC 3400 Computers and Modern Society. F, W, S, SS.
Credits: 4
Impact of computers on society. Discussion includes specific cases from many areas, but does not include problem solution by the student. This course does not teach how to use the computer but gives an understanding of the implications of computers.

Computer Design/Architecture

CDA 3030 Computational Techniques. F, S.
Credits: 4; Prereq: MAP 3302 and EIN 3114 or COP 3110 or COC 3110.
Applications of analog, digital and hybrid computers to computation and simulation.

CDA 3101 Introduction to Computer Organization. F, W, S, SS.
Credits: 4; Prereq: MAC 3311.
Organization of computing systems. Logical basis of computer structure. Machine representation of instructions and data, flow of control, basic machine instructions. Assembly language programming.

CDA 4040 Digital Computer Principles 1. F, W, S, SS.
Credits: 5; Prereq: CDA 3101.
Introduction to logic design with electronic digital integrated circuits. Applied switching algebra. Sequential circuits. Laboratory.

CDA 4041 Digital Computer Principles 2. F, S, SS.
Credits: 5; Prereq: CDA 3101. Concurrent enrollment in CDA 4171 is suggested.
The use of electronic digital modules to design computers. Organization and operation of computers. Hardware/software trade-offs, design of computer interfacing. Laboratory.

CDA 4171 Digital Computer Principles 3. F, S.
Credits: 5; Prereq: CDA 3101. Concurrent enrollment in CDA 4041 is suggested.
Hardware/software trade-offs in computer design. Minicomputer operation and programming. Software design for mini-computer systems and interfacing. Laboratory.

Computer Programming

COP 3110 Introduction to Computer Programming. F, W, S, SS.
Credits: 2; Prereq: High School Algebra.
An introduction to computer programming using FORTRAN. Relatively slow paced. Language development is not extensive. Problems will be solved using Computer Center facilities. Degree of programming skill is not tested.

COP 3111 Advanced FORTRAN Programming. F, W, S, SS.
Credits: 2; Prereq: COP 3210 or COP 3212 or EIN 3114 or permission of instructor.
Advanced topics in FORTRAN including logical, double precision and complex arithmetic and tape and disk (direct access) input and output. Creating and using a private library. Linkages to other languages.

COP 3120 Introduction to COBOL Programming. W, SS.
Credits: 4
A course in COBOL programming for non-CIS majors. Structured programming in COBOL is stressed. Topics include information transfers, arithmetic and logical operations, the structuring of data, and arrays.

COP 3121 Information Systems Programming 1. F, W, S, SS.
Credits: 4; Prereq: COP 3530.
Techniques for business information systems programming in COBOL utilizing comprehensive facilities of the COBOL language. Business applications and examples of their solutions will be employed throughout. Topics include advanced table handling as well as sequential, random, and indexed file organizations and manipulation techniques in COBOL.

COP 3122 Information Systems Programming 2. W.
Credits: 4; Prereq: COP 3121.
Advanced information systems programming utilizing the extended facilities of the COBOL language. Topics include information and string manipulation, sort/merge techniques, automated report generation, and multi-access terminal communication with the COBOL program in a teleprocessing environment.

COP 3134 PL/I Programming. F, SS.
Credits: 4; Prereq: COP 3530.
An advanced high level language programming course. Topics include record I/O, storage control, exceptional condition handling, compiletime facilities, and multitasking.

COP 3202 Problem Oriented Languages.
Credits: 4; Prereq: COP 3110 or equivalent or consent of instructor.
Study of one or more problem oriented languages with sufficient programming to illustrate problem oriented language concepts.

COP 3210 Computer Programming Using FORTRAN. F, W, S, SS.
Credits: 2; Prereq: MAC 1132 or equivalent.
An in depth treatment of computer programming using FORTRAN. Higher level of math and logic background required than for COP 3110. Relatively fast paced. Problems relating to the students' major area will be solved using Computing Center facilities. Degree of programming skill is subjectively tested.

COP 3212 Computer Programming for Engineers. F, W, S, SS.
Credits: 3; Prereq: MAC 3312.
Computer programming and the uses for large scale digital computers. Emphasis will be placed on the scientific oriented computer language FORTRAN. Engineering and technical problems are solved by each student using the facilities of the Computer Center. This course is specifically directed toward those students who are pursuing technical careers in fields employing a reasonably high degree of mathematics.

COP 3530 Data Structures. F, W, S, SS.
Credits: 4; Prereq: COC 3110.
Storage of arrays. Stacks, queues, and deques. Linked linear lists. Trees and multilinked structures. Sorting and searching.

COP 3550 Structure of Programming Languages. F, S, SS.
Credits: 4; Prereq: COP 3530.
Formal definitions of languages, including syntax and semantics. A comparative study of the structures and features of the major programming languages. Effective programming design techniques.

COP 4112 Applied FORTRAN Programming Techniques. F, W, SS.
Credits: 4
An intensive survey study of digital computer programming using the FORTRAN language. Practical problems in various disciplines will be solved by the students.

COP 4150 Introduction to APL. W.
Credits: 4
APL is a highly interactive computer language, through no formal computing or mathematics

prerequisite is required, considerable maturity is necessary. Some linear algebra is very desirable.

COP 4151 Advanced APL. S.
Credits: 4; Prereq: COP 4150.
Files and OS communications with APL. Large problems and projects, shared files. Large data bases and list editors.

COP 4226 Data Processing Languages.
Credits: 4; Prereq: COP 3530.
Design and implementation of data processing programs. File structures: searching, sorting and file maintenance. Report design and generation. A comparison of current data processing languages such as COBOL and RPG.

COP 4300 Discrete Systems Simulation. W, SS.
Credits: 3; Prereq: STA 4033.
Simulation methodology, languages and design. Monte Carlo techniques, GPSS (General Purpose Simulation System), applied to the solution of discrete system problems.

COP 4400 Basic Assembly Language 1. F, SS.
Credits: 4; Prereq: CDA 3101.
Study of basic assembly language for large scale computers. Covers the entire operation set including input and output. Macro programming and conditional assembly is also included.

COP 4401 Basic Assembly Language 2. W.
Credits: 4; Prereq: COP 4400.
Continuation of COP 4400.

COP 4540 File Structures. W, SS.
Credits: 4; Prereq: COP 3530.
Sequential, indexed, direct, and virtual files. Multiple-key file access facilities. Comparative data storage techniques using random access devices. Review of file management systems.

COP 4622 Systems Programming 2. W, SS.
Credits: 4; Prereq: COP 3530.
A comparative study of various operating systems.

COP 4640 Compilers 1. W.
Credits: 4; Prereq: COP 3550.
Translation of languages and scanning. Parsing techniques. The implementation of a compiler.

COP 4641 Compilers 2. S.
Credits: 4; Prereq: COP 4640.
Continuation of COP 4640. Object code optimizing.

COP 4644 Systems Programming 1. F, S.
Credits: 4; Prereq: COP 3530.
The design and implementation of loaders and assemblers. Introduction to the basic principles of operating systems.

Computer Resources/Management

CRM 4121 Information Centers. S.
Credits: 4; Prereq: Junior or Senior standing.
A study of the administration of a computer center, managing personnel, balancing personnel and hardware, software, evaluation and selection, project management and control, and utilization of outside computer service organizations.

Computer Theory

COT 3001 Applications of Discrete Structures. F.
Credits: 4; Prereq: CDA 3101.
Applications of symbolic logic to CIS. Sets, relations, functions, and data structures. Induction and recursion. Algebraic structures, grammars, and languages. Application and representation of graphs.

COT 4125 Formal Languages and Syntactic Analysis. S.
Credits: 4; Prereq: COP 3550.
Definition of formal grammars. Connections with automata theory. Applications to systems programming.

COT 4320 Computability and Unsolvability. W.
Credits: 4; Prereq: Junior or Senior standing.
Computability, algorithms, Turing machines, recursive functions, decidability, and unsolvability. A course primarily for students of mathematics, philosophy, and computer and information sciences.

COOPERATIVE EDUCATION PROGRAM
Academic Affairs

INSTRUCTIONAL STAFF 1977-78

Santoli, C.M., Coordinator.

General Information

The Cooperative Education Program offers students an opportunity to integrate their classroom instruction with practical work experience as a part of their academic program.

Educational work assignments are selected for students in career related fields with business, industry, government and other professional employers located in Florida and elsewhere. The Program gives students an opportunity to verify academic interests and career goals in the world of work.

Qualifications

To qualify for a Co-op work assignment a student must have completed his/her freshman year with at least a 2.0 GPA. After arrangements have been made for the student to be employed in a career-related job, enrollment in an appropriate "Co-op" Work Experience Course follows. This enables the student to earn college credit for the growth and development that occurs while on the job. (Exact use of credits earned should be reviewed with a departmental advisor prior to enrollment in a work experience course.)

Transfer Students

Students who were Co-oping at a Community College and who wish to continue to do so while at the university will ordinarily wait until after completing one quarter at the UF. Articulation agreements add further flexibility with Community College transfer students, and a "personalized" arrangement can often be made based on individual requirements.

Formats Co-op students may participate in the following work programs:
ALTERNATING: The student alternates between a full-time academic schedule followed by full-time work for a quarter, etc. (Variations are permitted for flexibility.)
PARALLEL: The student, while carrying academic course work, is also employed in an appropriate job.
INTERNSHIP: Includes arrangements based on a single quarter of work experience. Can be scheduled any quarter, including the Summer quarter.

Course Offerings

Many academic departments offer specific Co-op courses for their students. In cases where this is not so, students may enroll in the following course.

COE 4949 Co-op Work Experience.
Credits: 3 to 5; May be repeated with change in contents 5-U basis only.
An educational work experience designed to assist the student in exploring career choices in business, industry, government and the professions, and to develop marketable skills.

CRIMINAL JUSTICE
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Swanson, R.M., Director; Alexander, M.E.; Houlden, P.J.; Keller, O.J.; Smith, D.E.; Terry, W.C. Collateral faculty represented by Delgrosso, R.L. (Political Science,); Frazier, C.E. (Sociology); Hollien, H.F. (Communication Processes); Rothman, H.B. (Speech).

The college of Arts and Sciences offers an interdisciplinary undergraduate major in Criminal Justice. The program is organized around a core of specialized courses in Criminal Justice as well as selected courses in Political Science, Sociology, and Psychology. The major in Criminal Justice is designed as preparation for leadership roles in such fields as law enforcement, court administration, corrections, probation, and parole, as well as preparation for graduate work in the social and behavioral sciences, and criminal justice.

Students who wish to major in Criminal Justice must have a 2.8 overall G.P.A. for admission to the program.

The minimum number of hours required for a baccalaureate degree in criminal justice would be 48 hours.

The requirements for the major in Criminal Justice are:

1. 20 credits from CCJ courses including CCJ 3020.
2. Two psychology courses from the following including at least one marked*: SOP 3004*, PPE 3004*, SOP 4513, SOP 4404, SOP 4334, CLP 4144.
3. Two sociology courses from the following including at least one marked*: SOC 4150*, 4130*, 3300, 3745, 4422, 4720.
4. Two political science courses from the following including at least one marked*: POS 3652*, 4682*, 4691*, PAD 4003, POS 4284.
5. STA 3013, 3023.

Criminal Justice majors may take, for credit toward their major, CCJ 4940 only once and for not more than 4 credit hours. (This course covers field experience as well as internships.) Criminal justice majors may take IDS 4940 for 4 elective credits, but not more than once for additional field experience.

CCJ 4905 may only be taken once, for no more than 4 credit hours. This is a supervised, independent research course and the student taking it must have taken CCJ 3700 (or a similar research methods course in POS, SOC, PSY, ANT), as a prerequisite. IDS 4905, POS 4905, PSY 4913, SOC 4905 may be taken for 4 elective credits for supervised independent research.

All students must have faculty approval to take any of these courses.

In addition, the student and his/her adviser will develop 20 additional elective hours from a list of more general courses offered in the departments of POS, PSY, SOC, STA, ANT, MAN.

Students should consult periodically with their advisers and/or the departmental office to keep abreast of program additions and changes. Criminal Justice majors and potential majors should contact the Criminal Justice Office.

Criminology and Criminal Justice

CCJ 3020 Introduction to Criminal Justice. F, W, S.
Credits: 4
Introductory course designed to provide an overview of the criminal justice system and its processes. Consideration of the interrelationships among criminal law, law enforcement, courts, diversion programs, corrections, probation and parole.

DAIRY SCIENCE

CCJ 3700 Criminal Justice Research. W, S.
Credits: 4; Prereq: CCJ 3020.
Application of social science methods to Criminal and Criminal Justice Research. Research design for evaluation of Criminal Justice Programs and test of theories of Criminal Etiology.

CCJ 4100 Law Enforcement and Social Control. F, W.
Credits: 4, Prereq: CCJ 3020.
Study of the role of the police in the criminal justice system of a democratic society. Focus on the organization of police work, discretion and police role in a socio-legal context.

CCJ 4290 Prosecution and Adjudication. W, S.
Credits: 4; Prereq: CCJ 3020.
An examination of the interactions among the legal, social and psychological influences on the behavior of criminal courts, prosecutors, defense attorneys and the accused.

CCJ 4300 Process of Correction, Probation & Parole. F, S.
Credits: 4; Prereq: CCJ 3020.
An examination and discussion of the American Correctional Process as a continuum with emphasis on development and system change.

CCJ 4905 Individual Work. F, W, S, SS.
Credits: 4; Prereq: CCJ major, 12 credits in criminal justice and consent of the instructor.
Qualified students and the instructor concerned will develop a course of study or investigation designed to extend available course work. A formal written report is required.

CCJ 4934 Contemporary Issues in Criminal Justice. F, W, S, SS.
Credits: 4; Prereq: CCJ 3020.
A changing-topic seminar which will examine a variety of current issues, techniques and problems in criminal justice. May be repeated with change in topic.

CCJ 4940 Practicum. F, W, S, SS.
Credits: 4; Prereq: Senior major in criminal justice, minimum 25 credits of required course work toward CRJ major and consent of the Director.
Supervised experience in a criminal justice agency. A post-practicum written report is required.

DAIRY SCIENCE

College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Van Horn, H.H., Chairman; Bachman, K.C.; Browning, C.B.; Collier, R.J.; Head, H.H.; Marshall, S.P.; Mull, L.E.; Smith, K.L.; Thatcher, W.W.; Webb, D.W.; Wilcox, C.J.; Wing, J.M. This staff cooperates in teaching courses in Animal Sciences — General and Food Science.

DAS 3211 Dairy Cattle Management. F, SS.
Credits: 4
Management principles necessary for successful dairying with emphasis on large dairy herds.

DAS 3214 Dairy Cattle Evaluation. S.
Credits: 2
Evaluation of dairy cows and sires on the basis of performance traits and visual appraisal. Use of performance records and pedigrees in evaluation of cows and sires, the standards of body conformation for the various dairy breeds, and beginning dairy cattle judging will be stressed.

DAS 4213 Dairy Management Techniques. W.
Credits: 1 to 4; Prereq: DAS 3211 and permission of instructor. May be repeated with change in contents up to a maximum of 4 credits.
Planning, direction and management techniques employed in large dairy herds.

††*Grading is on a S-U basis only.*

DAS 4411 Dairy Cattle Nutrition. S.
Credits: 3; Prereq: ASG 3404.
Principles of nutrition and their application to dairy cattle feeding.

DAS 4510 Physiology of Lactation. S.
Credits: 4; Prereq: BCH 3023.
Anatomy and development of the mammary gland and factors affecting milk yield and composition.

DAS 4614 Dairy Technology. F.
Credits: 5
Nature and properties of milk constituents; effects of processing upon milk constituents; defects in dairy foods and their causes; dairy foods processing; and analytical procedures for processing and quality control.

DAS 4941 Fulltime Practical Work Experience in Dairy Science. F, W, S, SS.
Credits: 1 to 4; S-U Grade only; Prereq: Prior arrangement with adviser, approval of Department Chairman and Dean.
Practical work must be a new experience and related to the field of study.

(For other Dairy Production related courses, see Animal Science — General and for other Dairy Foods related courses see Food Sciences.)

GRADUATE COURSES

DAS 6212C Advanced Dairy Cattle Management.
Credits: 4

DAS 6281 Dairy Science Research Techniques.
Credits: 4

DAS 6322 Introduction to Statistical Genetics.
Credits: 3

DAS 6512C Advanced Physiology of Lactation.
Credits: 3

DAS 6531 Endocrinology.
Credits: 5

DAS 6541 Energy Metabolism.
Credits: 4

DAS 6555 Environmental Physiology of Domestic Animals.
Credits: 4

DAS 6617 Advanced Dairy Technology.
Credits: 2 to 5

DAS 6651 Industrial Food Fermentations.
Credits: 4

DAS 6905 Problems in Dairy Science.
Credits: 1 to 5

DAS 6910 Supervised Research.
Credits: 1 to 5††

DAS 6931 Graduate Seminar in Dairy Science.
Credits: 1

DAS 6940 Supervised Teaching.
Credits: 1 to 5††

DAS 6971 Master's Research.
Credits: 1 to 15††

ECONOMICS

College of Business Administration

INSTRUCTIONAL STAFF 1977-78

Arditti, F.D.; Berg, S.V.; Blair, R.D.; Connolly, M.B.; Davis, J.R.; Denslow, D.A.; Fishkind, H.H.; Frazer, W.J.; Fristoe, C.W.; Goddard, F.O.; Goffman, I.J.; Horowitz, A.R.; Kafoglis, M.Z.; Keig, N.G.; Kenny, L.W.; Koefod, P.E.; Kreicher, L.L.; Langham, M.R.; Lanzillotti, R.F.; Lockhart, M.; Maddala, G.S.; Milliman, J.W.; Osterbind, M.E.; Roberts, R.B.; Saunders, S.G.; Smith, S.; Taylor, D.G.; Toda, Y.; Tyler, W.G.; Vernon, J.R.; Woodruff, W.

An undergraduate major in Economics is available through both the College of Arts and Sciences and the College of Business Administration. Potential Economics majors should see an Economics advisor prior to entering upper division. Among the areas of concentration within the major are: Asian Studies, Business Economics, General Economics, International Economics, Latin American Economics, Pre Law, Pre Med, Public Service, Qualitative Methods in Economics and Business (including Computer Sciences), Urban Economics, and Secondary School Teaching (Certification in the Social Sciences).

Students majoring in Economics through the College of Arts and Sciences must complete at least 36 total hours of Economics work and a course in Statistics STA 3023. Majors are required to include in their Economics work ECO 4101 and ECO 4205 (normal prerequisites: ECO 2013-2023) and at least three courses from the following:*

ECO 3213	ECO 4633, ECO 4634, ECO 4622**
ECO 3703	ECO 4504
ECO 3411	ECO 4403
ECO 4935	

Students in Arts and Sciences must attain a grade of "C" or better in ALL required work including the three courses selected from the list above.

Departmental Honors in Economics are awarded to Arts and Sciences students who have a 3.3 average in all Economics work and have completed a 5 hour honors program. The honors program will involve a research project and paper and enrollment in either a combination of ECO 4935 (3 hrs.) and ECO 4905 (2 hrs.) or in ECO 4905 for 5 hrs. Students progress will be evaluated by three faculty members.

Students majoring in Economics through the College of Business Administration must substitute ECO 4101 and ECO 4205 for ECO 3251-3100 in the College core program. They must also complete 18-28 credit hours of Economics electives including at least three courses (other than ECO 3411) from the list above.

See the appropriate sections for the College of Arts and Sciences and the College of Business Administration for further details.

GRADUATE COURSES

For admission to graduate courses, the student must have been admitted to the Graduate School, and normally should have had undergraduate courses in fields pertinent to the graduate course selected; or where necessary, special arrangements may be made with the approval of the department head.

Though no graduate major may be completed without adequate course work on the 6000 or higher level, certain undergraduate courses in economics are available for graduate credit as a part of a candidate's major. These are: Economic and Social History of Russia; ECO 5227 Central Banking and Monetary Policies; ECO 5545 Central Government Finance; ECO 5556 State and Local Finance; ECO 5716 Foreign Exchange and International Financial Institutions; ECS 5425 Financial Institutions and Fiscal Policies of Selected Latin American Countries; ECS 5115 Contemporary Economic Problems in Sub-Sahara Africa; ECO 5424-5425 Econometrics; ECP 5205 Economics of the Labor Market; ECP 5624 Regional Economics; ECP 5614 Urban Economics; ECP 5106 Economics of Human Resource Development; ECP 5606 Special Problems in Urban and Regional Economics.

Accounting
GRADUATE COURSE

ACC 6811 Social and Economic Accounting.
Credits: 5

Economics

ECO 2000 Economic Concepts and Institutions. W.
Credits: 4
Designed for students wishing a survey course in Economic Problems, and for junior college and public school teachers of social sciences. Basic economic concepts and the institutions of private enterprise systems. Theory, measurement and problems of national income and economic growth. Comparisons of main features of private enterprise and controlled economies.

ECO 2013 Basic Economics 1. F, W, S, SS.
Credits: 5
The nature of economics, economic concepts and institutions; emphasis on the accounting, analytical, and policy aspects of national income and product, as well as public finance, money and banking, and international trade.

ECO 2023 Basic Economics 2. F, W, S, SS.
Credits: 5
Theories of production, determination of prices and distribution of income in regulated and unregulated industries. Attention is also given to the problems of industrial relations, monopolies, and to comparative economic systems.

ECO 2620 Economic History of the United States. S.
Credits: 4
Industrial development of America; exploitation of natural resources; history of manufacturing, banking, trade, transportation, etc., the evolution of industrial centers; the factors contributing to the growth of the United States.

ECO 3100 Prices and Markets. F, W, S, SS.
Credits: 3; Prereq: ECO 2013-2023. Not for economics majors. Student may not receive credit for both ECO 3100 and ECO 4101.
The determination of prices and outputs of firms and industries under various market conditions. Reliance is placed upon both theory and applications.

ECO 3213 Monetary Economics. F, W, S.
Credits: 4; Prereq: ECO 4303 or ECO 3251.
Analysis of monetary systems and the relationships between money, prices, production, and employment. Factors determining the money supply, with emphasis on the role of commercial and central banks, and money-demand.

ECO 3251 National Income Determinants and Policy. F, W, S, SS.
Credits: 5; Prereq: ECO 3100. Not for economics majors. Student may not receive credit for both ECO 3100 and ECO 4205.
National economic goals; the determinants of national income, consumption, investment, employment, money and prices; and the role of monetary and fiscal policy in attaining these goals.

ECO 3411 Economic and Business Statistics. F, W, S, SS.
Credits: 4; Prereq: STA 3023.
Introduction to properties of estimators, linear regression, analysis of variance, and non-parametric tests. Application of these tools to problems.

ECO 3703 International Economics. F, S.
Credits: 5; Prereq: ECO 3100 or ECO 4101 or permission of instructor.
Theory of international trade, significance of geographic, economic, social and political influences, current problems and tendencies in international trade and payments, tariffs, and other barriers to world trade, and national policies affecting foreign commerce.

ECO 4101 Microeconomic Theory. F, W, S, SS.
Credits: 5; Prereq: ECO 2013-2023. Primarily designed for majors in economics.
Nature, scope, and purpose of economic analysis. Examines the theory of consumer behavior, production, costs, firm behavior, and the allocation of resources.

ECO 4205 Macroeconomic Theory. F, W, S, SS.
Credits: 4; Prereq: ECO 3100 or ECO 4101 or permission of department.
Primarily designed for majors in economics. Theoretical determinants of aggregate employment, income, expenditures and the price level. Keynesian and neoclassical models are analyzed.

ECO 4303 Introduction to the History of Economic Thought. W.
Credits: 5
Leading ideas of the key contributors to the development of modern economic thought as set forth in their original works, with attention to the historical context and problems from which these ideas have emerged.

ECO 4431 Analysis and Forecasting of General Business Fluctuations. S.
Credits: 3; Prereq: STA 3023.
Mathematical and statistical theory of the relationship of important variables in the business cycle, such as profits, the price level, wages, national income, employment, savings and investments. Application of this theory to business forecasting.

ECO 4504 Public Finance. F, W, S.
Credits: 4; Prereq: ECO 2013-2023.
Principles governing expenditures of modern government; sources of revenue; public credit; fiscal policy; principles and methods of taxation and financial administration.

ECO 4622 United States Economic Development. S.
Credits: 5; Prereq: ECO 3251 or ECO 4205.
A study of American development from colonial times to the present, focusing on the sources of growth and institutional change. Emphasis on the analytical use of theory and statistics.

ECO 4633 Development of Modern Western Economy.
Credits: 5; Prereq: ECO 3251 or ECO 4205.
An analytical study of the economic development of Western Europe from the commercial revolution to the decline of British dominance in the world economy.

ECO 4634 Development of Modern Western Economy.
Credits: 5; Prereq: ECO 3251 or ECO 4205.
A continuation of ECO 4633. Twentieth century economic history.

ECO 4713 International Economic Relations. W.
Credits: 4; Prereq: ECO 3251 or ECO 4205 or permission of instructor.
The development of international economic policies; geographic, economic, social and political factors underlying contemporary international problems; economic and political methods employed by the leading commercial nations.

ECO 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5; Prereq: 15 hours of economics and permission of department.
For advanced undergraduate students who need to supplement regular course work by individual studies under guidance. May be repeated with change of content up to a maximum of 10 credits.

ECO 4934 Special Topics. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of department.
Course of variable content providing an opportunity for the study in depth of topics not offered in other courses. May be repeated with change in content up to a maximum of 10 credits.

ECO 4935 Senior Seminar in Economics. S.
Credits: 3; Prereq: Advanced standing and permission of economics advisor. May be repeated for credit with change of content for a maximum of 9 credits.
Seminar in contemporary economic problems and issues. An intensive study of a specific area of public policy including current literature and research methods.

GRADUATE COURSES

ECO 5111 Macroeconomic Theory.
Credits: 5

ECO 5204 Macroeconomic Theory.
Credits: 5

ECO 5227 Central Banking and Monetary Policy.
Credits: 5; Prereq: ECO 3213 or its equivalent.

ECO 5404 Statistical Methods in Economics.
Credits: 5; Prereq: STA 3023.

ECO 5424 Econometric Models and Methods 1.
Credits: 5

ECO 5425 Econometric Models and Methods 2.
Credits: 5

ECO 5545 Central Government Finance.
Credits: 5; Prereq: ECO 2013-2023.

ECO 5556 State and Local Finance.
Credits: 5; Prereq: ECO 2013-2023.

ECO 5566 Government Budgeting and Financial Administration.
Credits: 3; Prereq: Permission of department.

ECO 5716 Foreign Exchange and International Financial Institutions.
Credits: 3; Prereq: Permission of department.

ECO 6115 Neo-Classical Economics.
Credits: 5

ECO 6116 Microeconomic Theory 1.
Credits: 5

ECO 6117 Microeconomic Theory 2.
Credits: 5; Prereq: ECO 6116.

ECO 6206 Macroeconomic Theory.
Credits: 5

ECO 6207 Macroeconomic Theory 2.
Credits: 5; Prereq: ECO 6206.

ECO 6216 Monetary Economics 1.
Credits: 5

ECO 6236 Seminar in Monetary Economics.
Credits: 5

ECO 6257 Stabilization Policy.
Credits: 5

ECO 6266 Monetary Economics 2.
Credits: 5

ECO 6305 The Development of Economic Thought 1.
Credits: 5

ECO 6306 The Development of Economic Thought 2.
Credits: 5

ECO 6315 Present-Day Schools of Economic Thought.
Credits: 5

ECO 6405 Mathematical Economics 1.
Credits: 5

ECO 6406 Mathematical Economics 2.
Credits: 5

Descriptions

ECONOMICS

ECO 6407 Nonstochastic Models.
Credits: 5

ECO 6426 Econometric Methods 1.
Credits: 5

ECO 6427 Econometric Methods 2.
Credits: 5

ECO 6428 Research Seminar in Econometrics.
Credits: 1 to 5

ECO 6433 Macroeconomic Models and the Firm.
Credits: 5

ECO 6435 Problems in Statistics and Business Forecasting.
Credits: 5

ECO 6516 Public Revenue and Distribution.
Credits: 5

ECO 6526 Welfare Economics.
Credits: 5

ECO 6536 Public Expenditures and Collective Decisions.
Credits: 5

ECO 6617 The United States in the World Economy (1783-1960).
Credits: 5

ECO 6626 The American Economy to 1860.
Credits: 5

ECO 6627 The American Economy Since 1860.
Credits: 5

ECO 6706 Theory of International Trade.
Credits: 5

ECO 6717 International Economic Relations.
Credits: 5

ECO 6910 Supervised Research.
Credits: 1 to 5††
Credit not applicable toward degree. May be repeated.

ECO 6940 Supervised Teaching.
Credits: 1 to 5††
Credit not applicable toward degree. May be repeated.

ECO 6971 Master's Research.
Credits: 1 to 15††

ECO 7118 Advanced Microeconomic Theory.
Credits: 5

ECO 7208 Advanced Macroeconomic Theory.
Credits: 5

ECO 7938 Advanced Economic Seminar.
Credits: 1 to 5

ECO 7980 Doctoral Research.
Credits: 1 to 15††

Economic Problems & Policy

ECP 3000 Economic Issues of the '70s. W.
Credits: 2††
A series of lectures by distingulshed visiting economists addressing important and current economic questions of American Society. May be repeated up to a maximum of 4 credits.

ECP 3141 The Economics of Women.
Credits: 3
An analysis of women's labor force activity, past and present, in various economic and political systems. Relationship of women's labor force activity, past and present in various economic and political systems. Relationship of women's role to the operation of the economic concepts involved in the role of women in the marketplace and in the household and family; women's services as public and private goods.

ECP 3203 Labor Problems. F.
Credits: 5; Prereq: ECO 2023.
Insecurity, wages and income, hours, substandard workers; industrial conflict, unionism in its structural and functional aspects, employee representation, employers' associations; labor legislation, settlement of industrial disputes.

ECP 3302 Environmental Economics and Resource Policy. S.
Credits: 4
The relations between environmental quality, resource utilization, and economic institutions and policy. An examination of alternative strategies and policies in solving the problems of environmental quality and resource scarcity.

ECP 3423 Public Utility Economics. W.
Credits: 3; Prereq: ECO 2013-2023.
The nature, place and development of public service corporations; types of public control; valuation and ratemaking regulation of service, accounts, reports, and securities; combinations; public relations, public ownership.

ECP 3433 Transportation Economics. S.
Credits: 5; Prereq: ECO 2023.
General survey of the significance, characteristics and major problems of inter- and intra-city transportation.

ECP 4143 Blacks in the American Economy. W.
Credits: 5
A case study of the Economics of Discrimination; the role played by Blacks in the U.S. economy, with emphasis on contributions and areas of conflict.

ECP 4403 Government Regulation of Business. F, S.
Credits: 5; Prereq: ECO 3100 or ECO 4101 or permission of instructor.
The evolution of economic regulation, chief methods of effectuating governmental regulation; the relationship between government and non-public utility monopolies; Federal Trade Commission regulation of competitive practices; a critical appraisal of recent developments in the field of governmental regulation.

ECP 4602 Urban Economics.
Credits: 5; Prereq: ECO 2013-2023 or permission of instructor.
Economic analysis of urbanization and the spatial distribution of economic activities. Analytical tools are developed and applied to urban and regional problems such as: growth and decay, housing, land use, and transportation.

Graduate Courses

ECP 5106 Economics of Human Resource Development.
Credits: 3; Prereq: ECO 3100 or equivalent.

ECP 5205 Economics of the Labor Market.
Credits: 5; Prereq: ECP 3203.

ECP 5606 Special Problems in Urban and Regional Economics.
Credits: 5

ECP 5614 Urban Economics.
Credits: 5; Prereq: ECO 2013-2023 and permission of department.

ECP 5624 Regional Economics.
Credits: 5

ECP 6207 Labor Economics.
Credits: 5

ECP 6216 Organized Labor in the United States.
Credits: 5

ECP 6225 Labor Markets, Manpower and Public Policy.
Credits: 5

ECP 6405 Industrial Organization and Social Control.
Credits: 5

ECP 6407 Problems in Social Control.
Credits: 5

ECP 6426 Economics of Regulated Industries.
Credits: 5

ECP 6536 Health Care Economics 1.
Credits: 5

ECP 6537 Health Care Economics 2.
Credits: 5

ECP 6615 Urban Economics.
Credits: 5

ECP 6625 Regional Economics.
Credits: 5

ECP 6705 Economics of Business Decisions.
Credits: 5

ECP 6905 Individual Work in Economics.
Credits: 1 to 5; maximum credits: 10.

Economic Systems & Development

ECS 3403 Industry and Trade of Latin America. S.
Credits: 3
The industrial importance of several Latin American Countries; the development of the industries in each country, the volume and types of exports and imports as well as the trade practices and customs of these countries.

ECS 4003 Comparative Economic Systems. W.
Credits: 4
The economies of capitalism, socialism, communism, and fascism. The United States, Soviet Russia, England, Nazi Germany, and Fascist Itlay are compared on the basis of industrial production, agriculture, exchange, credit and banking, income distribution, the status of labor, and international trade.

ECS 4013 Economic Development. S.
Credits: 4; Prereq: ECO 2013-2023.
Problems and policies of modernization related to economic change and growth in the third world. Empirical and theoretical case studies. Area study and formulation of development projects and programs.

ECS 4203 Economies of East Asia.
Credits: 4; Prereq: ECO 2013-2023 or permission of instructor.
Emphasis on Japan and China. Growth patterns and institutional frameworks compared to those of other countries. Quantitative trends of gross national product and qualitative assessments of industrial organization, labor relations, agricultural technology, and government policies.

ECS 4334 Economic and Social History of Modern Russia and the Soviet Union.
Credits: 4
A survey from Tripoli to the Soviet Union. The development of agriculture, industry, and trade and their institutional manifestations; growth theory and conditions of economic growth.

GRADUATE COURSES

ECS 5005 Comparative Analysis of Economic Systems.
Credits: 4; Prereq: Permission of department.

††Grading is on a S-U basis only.

ECS 5115 Contemporary Economic Problems in Sub-Sahara Africa.
Credits: 3

ECS 5425 Financial Institutions and Fiscal Policies of Selected Latin American Countries.
Credits: 3

ECS 6006 Economic Systems Seminar.
Credits: 5

ECS 6015 Theory of Economic Development.
Credits: 5

ECS 6025 Economic Development Seminar.
Credits: 5

ECS 6405 The Economy of Spanish Latin America.
Credits: 5

ECS 6415 The Economy of Brazil.
Credits: 5

ECS 6426 Financial and Fiscal Institutions of Selected Sub-Saharan Countries.
Credits: 5

Social Sciences — Interdisciplinary

SSI 4601 Masterpieces in the Social Sciences 1. F.
Credits: 4; Prereq: Senior standing.
For advanced students with background work in the social sciences who have approval of their major adviser and the course chairman. Reading of classics in economics, history, political science, sociology and cultural anthropology.

SSI 4602 Masterpieces in the Social Sciences 2. W.
Credits: 4; Prereq: Senior standing.
The second part of the course SSI 4601-4602-4603.

SSI 4603 Masterpieces in the Social Sciences 3. S.
Credits: 4; Prereq: Senior standing.
The third part of the course SSI 4601-4602-4603.

EDUCATIONAL ADMINISTRATION AND SUPERVISION
College of Education

INSTRUCTIONAL STAFF 1977-78

Wattenbarger, J.L., Chairman; Alexander, S.K.; Clark, P.A.; Cole, T.W.; Forgnone, C.J.; Franklin, H.; Hale, J.A.; Kimbrough, R.B.; Longstreth, J.W.; Myers, R.B.; Nickens, J.M.; Nunnery, M.Y.; Sandeen, A.; Todd, E.A.; Mautz, R.

Adult Education

ADE 6260 Organization and Administration of Adult Education.
Credits: 4

ADE 6262 Principles of Community Education Administration.
Credits: 4

Education: Administration

EDA 6061 Educational Organization and Administration.
Credits: 4

EDA 6105 Operations Research in Educational Administration.
Credits: 4; Prereq: EDA 6271 and Statistics course.

EDA 6192 Educational Leadership 1.
Credits: 4

EDA 6195 Educational Leadership 2.
Credits: 4

EDA 6201 Business Affairs in Education.
Credits: 4

EDA 6203 Educational Budgeting and Accounting Systems.
Credits: 4

EDA 6222 Administration of School Personnel.
Credits: 4

EDA 6225 Labor Relations in Public Education.
Credits: 4

EDA 6232 Public School Law.
Credits: 4

EDA 6242 Public School Finance.
Credits: 4

EDA 6271 Utilization of Computers in Educational Administration.
Credits: 4

EDA 6306 Theories and Practices of Community Education Administration.
Credits: 4; Prereq: ADE 6262.

EDA 6510 Organization and Administration of Elementary Schools
Credits: 4

EDA 6530 Organization and Administration of Secondary Schools.
Credits: 4

EDA 6905 Individual Work.
Credits: 2 to 5. Maximum of 15 credits.

EDA 6910 Supervised Research.
Credits: 1 to 5††

EDA 6931 Special Topics.
Credits: 1 to 5; maximum of 15 credits.

EDA 6935 Problems in School Administration and Supervision.
Credits: 1 to 5; maximum of 15.

EDA 6940 Supervised Teaching.
Credits: 1 to 5††

EDA 6948 Supervised Practice in School Administration.
Credits: 4††; maximum of 8 credits.

EDA 6971 Master's Research.
Credits: 1 to 15††

EDA 7103 Seminar: Theories of Educational Administration.
Credits: 4

EDA 7205 Educational Planning.
Credits: 4

EDA 7236 The Law and Higher Education.
Credits: 4

EDA 7244 The Financing of Higher Education.
Credits: 4

EDA 7260 Planning Educational Facilities.
Credits: 4

EDA 7550 Higher Education Administration.
Credits: 4

EDA 7565 Coordination of State Systems of Higher Education.
Credits: 4

EDA 7945 Practicum in Supervision and Administration.
Credits: 1 to 10††; maximum of 15 credits.

EDA 7980 Doctoral Research.
Credits: 1 to 15††

EDA 7990 Research Design in Educational Administration.
Credits: 3

Education: Exceptional Child — Core Competencies

EEX 6511 Administration in Special Education.
Credits: 4

EEX 7535 Seminar in Administration and Supervision of Special Education.
Credits: 4

EEX 7945 Practicum: Special Education Administration.
Credits: 4 to 12

COUNSELOR EDUCATION DEPARTMENT
College of Education

INSTRUCTIONAL STAFF 1977-78

Wittmer, P.J., Chairman; Amatea, E.; Clark, E.B.; Cranney, A.G.; Goodale, T.; Landsman, T.; Lane, D.; Larson, J.; Lee, R.E.; Loesch, L.C.; McDavis, R.J.; McMillin, M.R.; Meek, P.; Myrick, R.D.; Riker, H.C.; Saxon, J.; Schauble, P.; Seiler, G.; Sharp, B.L.; Stripling, R.O.; Tolbert, E.L.

Guidance & Counseling

EGC 3053 Student Development in a University Setting. F, W, S.
Credits: 3; (Grading on S-U basis only.)
Course available to selected undergraduate students only. Examines factors affecting student growth and development in the university setting, current problems facing students, and the use of group processes and leadership training in solving problems and facilitating growth. Course may be repeated with a change of content to a maximum of 9 credits.

EGC 4033 Interpersonal Communication Skills for Teachers.
Credits: 4
The application of basic principles of a helping relationship in the classroom with emphasis on the affective dimensions of teaching. Attention will be given to using basic guidance and counseling strategies and psychological techniques as an aid to instruction.

GRADUATE COURSES

EGC 6005 Principles of Guidance: The Helping Relationship.
Credits: 4

EGC 6045 Counseling with Children.
Credits: 4

EGC 6054 Problems in Personnel Work.
Credits: 3 to 10

EGC 6055 Student Personnel Services in Higher Education.
Credits: 4

EGC 6057 The College Community and the Student.
Credits: 4

EGC 6225 Personnel Testing.
Credits: 4

EGC 6317 Vocational Development.
Credits: 4

EGC 6405 Modern Counseling and Personnel Work.
Credits: 4

EGC 6416 Counseling Theory.
Credits: 5

EGC 6426 Counseling in Community Settings.
Credits: 4

††Grading is on a S-U basis only.

Descriptions

EGC 6438 Play Therapy and Play Process With Children.
Credits: 4

EGC 6447 Laboratory in Counseling.
Credit. 1

EGC 6461 Drug Abuse: The Counselor's Role.
Credits: 4

EGC 6463 Counseling Ethnic Minorities.
Credits: 4

EGC 6465 Counseling for Mid-Life and Pre-Retirement.
Credits: 4

EGC 6466 Counseling Needs of Older Persons.
Credits: 4

EGC 6467 Counseling Older Persons, Theories and Techniques.
Credits: 4

EGC 6505 Group Procedures in Guidance and Personnel Work.
Credits: 4

EGC 6545 Group Counseling.
Credits: 4

EGC 6606 Organization and Administration of Guidance and Personnel Programs.
Credits: 4

EGC 6726 Sensitivity Exploratory Laboratory.
Credit: 1

EGC 6905 Individual Work.
Credits: 3 to 6; Maximum of 15 credits.

EGC 6910 Supervised Research.
Credits: 1 to 5

EGC 6934 Seminar in Professional Development.
Credits: 2

EGC 6938 Special Topics.
Credits: 2 to 5; Maximum of 15 credits.

EGC 6940 Supervised Teaching.
Credits: 1 to 5

EGC 6971 Masters Research.
Credits: 1 to 15

EGC 7056 Seminar in Higher Education Student Personnel.
Credits: 1 to 2

EGC 7329 Seminar in Career Development.
Credits: 4

EGC 7446 Practicum in Counseling.
Credits: 5; Maximum of 25 credits.

EGC 7485 Seminar in Counseling Research
Credits: 4

EGC 7585 Practicum in Group Counseling.
Credits: 5; Maximum of 15 credits.

EGC 7616 Evaluative Research in Counseling, Guidance, and Personnel Work.
Credits: 5

EGC 7706 Consultation Procedures.
Credits: 4

EGC 7840 Practicum in Student Personnel Work.
Credits: 5; Maximum of 15 credits.

EGC 7852 Practicum in Counseling Older Persons.
Credits: 5

EGC 7890 Internship in Personnel Work.
Credits: 5; Maximum of 15 credits.

††Grading is on a S-U basis.

EGC 7891 Practicum in Counseling Psychology.
Credits: 5; Maximum of 20.

EGC 7892 Practicum in Psychological Assessment.
Credits: 5

EGC 7893 Internship in Counseling Psychology.
Credits: 5

EGC 7937 Seminar in Personnel Work.
Credits: 5

EGC 7980 Doctoral Research.
Credits: 1 to 15

EDUCATION-FOUNDATIONS

College of Education

INSTRUCTIONAL STAFF 1977-78

Sherman, R.R., Chairman; Andrews, S.D.; Ashton, P.F.; Avila, D.L.; Bengston, J.K.; Brown, B.B.; Busby, W.A.; Crocker, L.M.; Curran, R.L.; Greenwood, G.E.; Guertin, W.H.; Guinagh, B.J.; Hines, V.A.; Jester, R.E.; Koran, M.L.; Lewis, H.G., Sr.; Newell, J.M.; Newman, A.J.; Primack, R.B.; Renner, R.R.; Soar, R.S.; Ware, W.B.; Wass, H.L.; Webb, R.B.; White, A.O.

EDF 3110 Human Growth and Development. F, W, S, SS.
Credits: 5; Prereq: Permission of departmental representative for lower division students.
An analysis of the principles of human development as they apply to understanding pupil behavior in the classroom. Observation in the P.K. Yonge Laboratory School is required.

EDF 3122 The Young Child. F, W, S, SS.
Credits: 5
Study of growth and development during infancy and early childhood. Laboratory includes observation and participation in nursery school and kindergarten.

EDF 3135 The Adolescent. F, W, S, SS.
Credits: 5; Prereq: Permission of departmental representative for lower division students.
The special role that the adolescent plays in total development. Emphasis is on the psychosocial development of the adolescent in the school.

EDF 3514 History of Education in the United States. F, W, S, SS.
Credits: 5
The development of American schools and major problems in American education, with emphasis upon the relationships among the schools, intellectual movements, and social institutions.

EDF 3604 Social Foundations of Education. F, W, S, SS.
Credits: 5
A study of the educative effects of our social structures, the social values and issues involved in appraising these effects, and the resulting social demands upon the schools.

EDF 3935 Special Topics. F, W, S, SS.
Credits: 1 to 5; Max. 15; Prereq: Consent of department chairman.

EDF 4114 Dynamics of Human Development. F, W, S, SS.
Credits: 5; Prereq: EDF 3110 or equivalent.
The dynamics of personality development with implications for classroom practice. Particular attention will be given to the development of self in childhood and adolescence.

EDF 4210 Educational Psychology. F, W, S, SS.
Credits: 5
An understanding of the applications of psychological principles to the educational process. It treats such topics as individual differences, principles of learning, transfer of training, and the nature of reasoning.

EDF 4430 Measurement and Evaluation in Education. F, W, S, SS.
Credits: 5
Study is made of the basic principles and methods of measurement and evaluation of pupil learning in schools.

EDF 4542 Philosophy of Education. F, W, S, SS.
Credits: 5
A critical examination is made of various theories and philosophies of education, their relationships to the democratic principle, and their significance to the evolving system of education in the United States.

EDF 4710 Comparative Education. F, W, S, SS.
Credits: 5; Prereq: Permission of departmental representative for lower division students.
A survey of educational problems in contemporary foreign countries with emphasis upon their implications for the United States.

EDF 4780 Education and the World Community. F, W, S, SS.
Credits: 5
The relationship between the school and the student's development of a world-minded disposition, with an examination of curricula implications.

EDF 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5
May be repeated with change of content up to a maximum of 10 credits. For undergraduate students of Upper division status, who wish to explore areas of inquiry in psychological, social, or philosophical foundations of education, or research or measurement, under faculty guidance.

GRADUATE COURSES

EDF 5215 Principles of Learning and Instructional Practice.
Credits: 5

EDF 6111L Laboratory in Human Development 1.
Credits: 5

EDF 6112L Laboratory in Human Development 2.
Credits: 5

EDF 6113 Educational Psychology: Human Development.
Credits: 5

EDF 6118 Educational Psychology: Aging and Education.
Credits: 5

EDF 6119 Educational Psychology: Death Education.
Credits: 4

EDF 6211 Educational Psychology: General.
Credits: 5

EDF 6215 Educational Psychology: Learning Theory.
Credits: 5

EDF 6218 Educational Psychology: Problems.
Credits: 5

EDF 6355 Educational Psychology: Personality Dynamics.
Credits: 5

EDF 6401 Educational Statistics.
Credits: 4

EDF 6403 Quantitative Foundations of Educational Research.
Credits: 10

EDF 6436 Introduction Theory of Measurement.
Credits: 5

EDF 6481 Research Methods in Education.
Credits: 5

EDF 6487 Assessment of Classroom Behavior.
Credits: 4

EDF 6520 History of Education.
Credits: 5

EDF 6525 Ancient and Medieval Education.
Credits: 5

EDF 6544 Philosophical Foundations of Education.
Credits: 5

EDF 6606 Socio-Economic Foundations of Education.
Credits: 5

EDF 6630 Educational Sociology.
Credits: 5

EDF 6712 Comparative Education.
Credits: 5

EDF 6720 Education in Latin America.
Credits: 5

EDF 6905 Individual Work.
Credits: 1 to 5. Maximum of 15 credits.

EDF 6910 Supervised Research.
Credits: 1 to 5††

EDF 6933 Seminar on Research on Effective Teaching.
Credits: 4

EDF 6938 Special Topics.
Credits: 2 to 5

EDF 6940 Supervised Teaching.
Credits: 1 to 5††

EDF 6941 Practicum in Educational Research.
Credits: 3 to 12

EDF 6943 Practicum in Educational Psychology.
Credits: 5

EDF 6971 Master's Research.
Credits: 1 to 15††

EDF 7146 Educational Psychology: Cognition in the Educative Process.
Credits: 5

EDF 7149 Educational Implications of Perceptual Psychology.
Credits: 5

EDF 7198 Advanced Educational Psychology: Seminar in Aging and Education.
Credits: 5

EDF 7229 Advanced Educational Psychology: Learning.
Credits: 5

EDF 7405 Advanced Quantitative Foundations of Educational Research.
Credits: 5

EDF 7432 Advanced Psychometric Theory.
Credits: 5

EDF 7486 Methods of Educational Research.
Credits: 4

EDF 7491 Evaluation of Educational Products and Systems.
Credits: 5

EDF 7555 Education and Moral and Spiritual Ideas.
Credits: 5

EDF 7573 Contemporary Educational Theories.
Credits: 5

EDF 7575 Theories of Mind.
Credits: 5

EDF 7584 Educational Classics.
Credits: 5

EDF 7608 School and Society.
Credits: 5

EDF 7639 Research in Educational Sociology.
Credits: 5

EDF 7931 Seminar in Educational Research.
Credits: 4

EDF 7932 Analysis of Educational Research.
Credits: 4

EDF 7934 Seminar in Educational Foundations.
Credits: 5

EDF 7980 Doctoral Research.
Credits: 1 to 15††

GENERAL TEACHER EDUCATION
College of Education

INSTRUCTIONAL STAFF 1977-78

Myers, R.B., Chairman; Ambrose, E.V.; Blume, R.A.; Breivogel, W.F.; George, P.S.; Hanes, M.L.; Hilliard, P.; Johnson, S.O.; Kinzer, S.M.; Lamme, L.L.; Morgan, E.; Oberlin, L.C.; Packer, A.B.; Schuncke, G.M.; Shea, J.J.; Tison, J.P.

Art Education

ARE 3312 Art Experiences with Children. F, S.
Credits: 4
Directed experiences with children. Planning, teaching, and evaluating art experiences.

GRADUATE COURSES

ARE 5313 Teaching Art in Elementary School.
Credits: 4

ARE 5315 Teaching Art in Elementary School II.
Credits: 4

Education: Early Childhood
GRADUATE COURSES

EEC 5945 Laboratory in Nursery-Kindergarten Teaching.
Credits: 4; maximum of 8.

EEC 6051 History and Philosophy of ECE.

EEC 6205 Program Models in ECE.

EEC 6405 Resources for Early Childhood Education.
Credits: 4; maximum of 8 credits.

EEC 7932 Seminar in Childhood Education.
Credits: 4-8; maximum of 8 credits.

Education: Elementary

EDE 3800 Professional Studies in Childhood Education. F, W, S, SS.
Credits: 1 to 20††; maximum of 50 credits.
Includes (a) participation in a continuous professional seminar (b) study of content selected from the substantive areas listed below, and (c) an appropriate field experience. The substantive areas are: art, curriculum, language arts, math, reading, science, social studies, music, human growth and development, social foundations.

EDE 3804 Professional Studies in Elementary Education. F, W, S, SS.
Credits: 1 to 20††; maximum of 50 credits.
Includes (a) participation in a continuous professional seminar (b) study of content selected from the substantive areas listed below, and (c) an appropriate field experience. The substantive areas are: art, curriculum, language arts, math, reading, science, social studies, music, human growth and development, social foundations.

EDE 4203 Elementary School Today. F, W, S, SS.
Credits: 4; Prereq: Admission to Advanced Professional Sequence in Education.
Purposes, organization, and curriculum of the elementary school Concurrent with EDS 4203 for students in special fields desiring certification K-12.

EDE 4905 Individual Study. F, W, S, SS.
Credits: 2 to 5.
Open only to selected undergraduate students who wish to study an individual problem in depth which relates to their preparation as teachers. The project must be approved and supervised by a departmental faculty member.

EDE 4943 Student Teaching in Elementary School. F, W, S.
Credits: 4 to 16††, may be repeated to a maximum of 24; Prereq: See "Admission to Student Teaching in Any Teacher Education Program" and approval of the Elementary staff.
Student teaching in selected classrooms of public schools; special seminars and continuous evaluation of teaching experiences.

GRADUATE COURSES

EDE 6205 Elementary School Curriculum.
Credits: 4

EDE 6225 Practices in Childhood Education.
Credits: 4

EDE 6521 Alternative Models for Classroom Discipline.
Credits: 4

EDE 6541 Individualization of Instruction.
Credits: 4

EDE 6905 Individual Work.
Credits: 2-5; maximum of 15 credits.

EDE 6910 Supervised Research.
Credits: 1-5

EDE 6932 Special Topics.
Credits: 2-5; maximum of 15 credits.

EDE 6940 Supervised Teaching.
Credits: 1-5

EDE 6948 Practicum in Elementary Education.
Credits: 4-8; maximum of 16 credits.

EDE 7247 Problems in Childhood Education I.
Credits: 4

EDE 7248 Problems in Childhood Education II.
Credits: 4

EDE 7415 Evaluation in the Elementary School.
Credits: 4

Eduation: General
GRADUATE COURSES

EDG 6712 The Education of Culturally Disadvantaged Children and Youth.
Credits: 4

EDG 6941 Field Laboratory for Faculty Study of Special Problems.
Credits: 3-9; maximum of 9 credits.

EDG 6971 Master's Research.
Credits: 1-15

††Grading is on a S-U basis.

EDG 7795 Seminar in the Education of Disadvantaged Children and Youth.
Credits: 4

EDG 7980 Doctoral Research.
Credits: 1-15

Education: Middle School
GRADUATE COURSES

EDM 6005 The Emergent Middle School.
Credits: 4

EDM 6945 Practicum in Middle School Education.
Credits: 4; maximum of 12 credits.

EDM 7935 Seminar in Middle School Education.
Credits: 1 to 4

Education: Secondary
GRADUATE COURSES

ESE 6215 The Secondary School Curriculum.
Credits: 4

ESE 6235 Curriculum Development Laboratory.
Credits: 2-5; maximum of 15 credits.

ESE 6385 Supervision of Pre-Service Teachers.
Credits: 2-5; maximum of 5.

ESE 6920 Secondary Education Lecture Series.
Credits: 1; maximum of 3 credits.

ESE 7922 Secondary Education Colloquium.
Credits: 1; maximum of 6 credits.

ESE 7931 Seminar in Secondary Education.
Credits: 2-5; maximum of 15 credits.

Education: Supervision

EDS 6351 Supervision of Pre-Service Teachers.
Credits: 2-5; maximum of 5 credits.

The following specialized subject area courses may be necessary to fulfill requirements in General Teacher Education program areas.

Language Arts and English Education

LAE 6301 Early Childhood Language Arts and Reading.
Credits: 4

LAE 6319 Language Arts in the Elementary School.
Credits: 4

LAE 6714 Children's Literature in the Childhood Curriculum.
Credits: 4

Mathematics Education

MAE 5318 Teaching Modern Math in Elementary School.
Credits: 4

MAE 6115 Mathematics in the Elementary School.
Credits: 4

Reading Education

RED 5310 Reading in the Primary Grades.
Credits: 4

RED 5355 Reading in the Intermediate Grades.
Credits: 4

Science Education

SCE 5115 Teaching Science in Elementary School.
Credits: 4

††Grading is on a S-U basis only.

SCE 6117 Science Education in the Elementary School
Credits: 4

Social Studies Education.

SSE 6117 Social Studies Education—Elementary School.
Credits: 4

INSTRUCTIONAL LEADERSHIP AND SUPPORT
College of Education

INSTRUCTIONAL STAFF 1977-78

Hass, C.G., Chairman; Blair, T.R.; Crews, R.; Drummond, W.H.; Fillmer, H.T.; Hedges, W.D.; Hensel, J.W.; Lawrence, G.D.; Lewis, A.J.; Morgan, M.K.; Powell, W.R.; Smith, A.B.; Smith, L.L.; Turner, E.C.; Wenzel, E.L.; Williams, E.L.

Adult Education
GRADUATE COURSES

ADE 5081 Education for Adults.
Credits: 4

ADE 5472 Methods, Materials and Evaluation in Adult Education.
Credits: 4

ADE 6385 Teaching in Adult Education.
Credits: 4

ADE 6671 Adult Education: Progress and Prospect.
Credits: 4

ADE 7282 Adult Education in the Community College. (Junior College).
Credits: 4

ADE 7672 Contemporary Issues in Adult Education.
Credits: 4

Business Teacher Education

BTE 4905 Individual Study. F, W, S, SS.
Credits: 2 to 5; maximum of 10. Prereq: Consent of the instructor.
Open only to selected undergraduate students in the upper division who wish to study an individual problem in depth which relates to their preparation as teachers of vocational education. The project must be approved and supervised by a departmental faculty member.

Education: General

EDG 4905 Individual Study. F, W, S, SS.
Credits: 2 to 9
Open only to selected undergraduates who wish to study on an individual problem in depth which relates to their preparation as teachers. The project must be a part of the student's planned program and must be approved by and carried on under the guidance of a faculty member.

GRADUATE COURSES

EDG 6046 Contemporary Issues in Career Education.
Credits: 4

EDG 6250 The School Curriculum.
Credits: 4

EDG 6285 Evaluation in the School Program.
Credits: 4

EDG 6691 Problems in Curriculum and Instruction.
Credits: 3 to 15; maximum of 15 credits.

EDG 6905 Individual Work.
Credits: 2 to 5; maximum of 15 credits.

EDG 6910 Supervised Research.
Credits: 1 to 5††

EDG 6931 Special Topics.
Credits: 2 to 5, maximum of 15 credits.

EDG 6940 Supervised Teaching.
Credits: 1 to 5††

EDG 6941 Field Laboratory for Faculty Study of Special Problems.
Credits: 3 to 9; maximum of 9 credits.

EDG 6971 Master's Research.
Credits: 1 to 15††

EDG 7222 Curriculum: Theory and Research.
Credits: 4

EDG 7235 Programs of Teacher Education.
Credits: 4

EDG 7361 Instruction: Theory and Research.
Credits: 4

EDG 7391 Seminar on Instructional Leadership.
Credits: 4

EDG 7665 Bases of Curriculum and Instruction Theory I.
Credits: 4

EDG 7666 Bases of Curriculum and Instruction Theory II.
Credits: 4

EDG 7699 Seminar: Curriculum and Instruction Leadership in Postsecondary Education.
Credits: 1 to 2; maximum of 8 credits.

EDG 7941 Field Experiences in Curriculum and Instruction.
Credits: 1 to 5; maximum of 15 credits.

EDG 7947 Internship in Teacher Education I.
Credits: 4

EDG 7948 Internship in Teacher Education II.
Credits: 4

EDG 7980 Doctoral Research.
Credits: 1 to 15††

Education: Higher
GRADUATE COURSES

EDH 6053 The Community Junior College in America.
Credits: 4

EDH 6066 American Higher Education.
Credits: 4

EDH 6305 The Principles and Practices of College Teaching.
Credits: 4

EDH 6946 Practicum in College Teaching 2.
Credits: 4

EDH 6947 Practicum in College Teaching 1.
Credits: 4 to 8; maximum of 12 credits.

EDH 7937 Seminar: Curriculum in Higher Education.
Credits: 4

Education: Supervision

GRADUATE COURSE

EDS 6140 Supervision and the Change Process.
Credits: 4

Education: Technology and Media

Educational Media and Instructional Design

EME 4102 Audio-Visual Materials of Instruction. F, W, S, SS.
Credits: 4
A general course for teachers at all grade levels. Presents sources and methods of using audio-visual materials of instruction.

EME 4201 Production of Audio-Visual Materials. F, W, S.
Credits: 4; Prereq: EME 4102 or consent of instructor.
The selection, production and evaluation of instructional materials with emphasis upon the production of materials by photographic processes.

GRADUATE COURSES

EME 6052 Educational Technology Readings.
Credits: 4

EME 6105 Selection of Media Center Materials.
Credits: 4

EME 6205 Production Graphics.
Credits: 4

EME 6207 Media Center Production Techniques.
Credits: 4

EME 6325 Programmed Instructional Material.
Credits: 4

EME 6405 Computer Applications in Education.
Credits: 4

EME 6505 Microteaching, Instructional Television and the Classroom.
Credits: 4

EME 6606 Instructional Development.
Credits: 4

EME 6716 Educational Technology Center Operations.
Credits: 4

EME 6805 Cataloging and Classification of Print and Non-Print Materials.
Credits: 4

EME 6807 Organization of Reference Sources and Services.
Credits: 4

EME 6945 Practicum in Educational Media and Instructional Design.
Credits: 4 to 12

EME 7938 Seminar in Educational Media and Instructional Design.
Credits: 4

Education: Vocational/Technical

EVT 3065 Principles of Vocational Education. F, S, SS.
Credits: 4
Theories and principles of vocational education stressing the development, social and economic values, purposes, and scope of different programs of vocational education in our total educational program. A basic course for those preparing to teach vocational subjects.

EVT 3365 Methods in Vocational Education. W, SS.
Credits: 4
General methods of teaching vocational courses.

EVT 4302 Special Methods and Materials for Teaching Vocational-Technical Health Occupations. SS.
Credits: 4
Essentials of teaching in vocational-technical health occupations education programs. Identifying and relating the roles of the health specialist as a teacher; teaching; planning, devising, and structuring learning experiences; implementing strategies; methods for measuring progress.

GRADUATE COURSES

EVT 5166 Technical Education Program Development.
Credits: 4

EVT 5167 Curriculum and Organization in Vocational-Technical Health Occupations Education.
Credits: 4

EVT 6165 Vocational Education and Community Interaction.
Credits: 4

EVT 6170 Technical Education in Post High School Programs.
Credits: 4

EVT 6264 Administration of Vocational Education.
Credits: 4

EVT 6265 Supervision of Vocational Education.
Credits: 4

EVT 6381 Teaching Technical Education.
Credits: 4

EVT 6905 Individual Work in Vocational, Technical and Adult Education.
Credits: 2 to 5; maximum of 15 credits.

EVT 6910 Supervised Research.
Credits: 1 to 5††

EVT 6933 Special Topics.
Credits: 2; maximum of 15 credits.

EVT 6940 Supervised Teaching.
Credits: 1 to 5††

EVT 7661 Contemporary Issues in Technical Education.
Credits: 4

EVT 7762 Developing Technical Programs.
Credits: 4

EVT 7930 Seminar in Vocational and Technical Education.
Credits: 4

Reading Education

RED 4147 Techniques of Teaching Reading. F, W, S, SS.
Credits: 4
Basic principles, techniques and materials for a developmental reading program. Emphasis is placed on methods and techniques which provide for differentiated instruction.

GRADUATE COURSES

RED 5310 Reading in the Primary Grades.
Credits: 4

RED 5337 Reading in the Secondary School.
Credits: 4

RED 5355 Reading in the Intermediate Grades.
Credits: 4

RED 6247 Organization and Supervision of School Reading Programs.
Credits: 4

RED 6447 Selection and Production of Reading Materials.
Credits: 4

RED 6448 Technology in Reading Instruction.
Credits: 4

RED 6548 Corrective Reading.
Credits: 4

RED 6646 Problems in Reading.
Credits: 4

RED 6656 Trends in the Teaching of Reading.
Credits: 4

RED 6667 Issues in High School and Adult Reading.
Credits: 4

RED 6805 Practicum in Corrective Reading.
Credits: 4

RED 7747 Analysis of Theory and Research in Reading.
Credits: 4; maximum of 12 credits.

RED 7818 Practicum in Clinical Diagnosis.
Credits: 4

RED 7819 Theory of Clinical Procedures in Reading.
Credits: 4

RED 7848 Clinical Diagnosis.
Credits: 4

RED 7938 Seminar in Reading.
Credits: 4

RED 7947 Internship in Reading.
Credits: 4; maximum of 16 credits.

SPECIAL EDUCATION

College of Education

INSTRUCTIONAL STAFF 1977-78

Forgnone, C., Chairman; Algozzine, R.F.; Dykes, M.K.; Mercer, C.D.; Reichard, C.L.; Reid, W.R.; Schmid, R.E.; Schwartz, S.E.; Whorton, J.E.; Wolking, W.D.; Zickler, B.J.

Education: Emotional Disorders

EED 4011 Educational Aspects of Behavioral Problems in Children and Youth. F, W, S.
Credits: 3 to 5; Prereq: EEX 3010.
An analysis of the prevailing classification systems, etiologies, characteristics and identification procedures relating to behavioral disorders in children and youth. Consideration is given to the emerging trends in the education of children and youth with behavioral problems. H grading.

GRADUATE COURSES

EED 6221 Educational Aspects of Behavioral Problems in Children and Youth.
Credits: 3 to 5

EED 6225 Educational Theories and Practices for Children with Behavioral Problems.
Credits: 3 to 5

EED 6241 Educational Programming for Children with Behavioral Problems.
Credits: 3 to 5

EED 6245 Community Resources for Exceptional Children and Youth.
Credits: 2

EED 6943 Practicum in Special Education: Emotional Disturbance.
Credits: 4 to 12

EED 7930 Seminar: Program Development for Children with Behavioral Disorders.
Credits: 4

EED 7936 Seminar: Education of the Emotionally Disturbed Child.
Credits: 4

Education: Exceptional Child—Core Competencies

EEX 3010 Principles and Practices for Teaching Exceptional Children. F, W, S, SS.
Credits: 4
Incidence, causes, diagnosis, agencies for referral and recommended teaching procedures for the types of exceptional children found in public schools are considered

EEX 3040 Principles and Practices for Teaching Exceptional Children in the Regular Classroom. F, S.
Credits: 2
Characteristics of, identification of, and teaching practices for exceptional children who are in the mainstream of education. Designed for general education majors, both elementary and secondary.

EEX 3222 Laboratory Evaluation in Special Education. F, W, S, SS.
Credits: 3 to 6. Prereq: EEX 3010 or consent of the instructor
Study of the measures used in evaluating children referred in special education.

EEX 4861 Student Teaching - Special Education. F, W, S, SS.
Credits: 16††, maximum of 32 credits; Prereq: See "Admission to Student Teaching in Any Teacher Education Program," and approval of Special Education Staff.
Student teaching in selected classrooms and other situations for the education of the mentally retarded. Seminars and continuous evaluation of teaching experiences. No other courses may be taken during the student teaching quarter.

EEX 4905 Individual Study. F, W, S, SS.
Credits: 2 to 9
Open only to selected undergraduate students who wish to study an individual problem in depth which relates to their preparation as special education teachers. The project must be approved and supervised by a departmental faculty member.

GRADUATE COURSES

EEX 6040 The Exceptional Child in the Mainstream of Education.
Credits: 4

EEX 6051 Teaching Exceptional Children.
Credits: 4

EEX 6511 Administration in Special Education.
Credits: 4

EEX 6521 Organization and Program Planning in Special Education.
Credits: 4

EEX 6863 Supervised Practice in Special Education.
Credits: 16

EEX 6883 Clinical Teaching: Basic Academic Skills.
Credits: 5

EEX 6906 Individual Work.
Credits: 2 to 5

EEX 6936 Special Topics.
Credits: 2 to 5

EEX 6940 Supervised Teaching.
Credits: 1 to 5††

EEX 7520 Seminar in Administration and Supervision of Special Education.
Credits: 4; Max. of 12.

EEX 7865 Internship: Special Education.
Credits: 4 to 16

††Grading is on a S-U basis only.

EEX 7930 Seminar in Special Education.
Credits: 4

EEX 7932 Seminar: Current Research in Special Education.
Credits: 4

EEX 7934 Seminar: Trends in Special Education.
Credits: 4

EEX 7945 Practicum: Special Education Administration.
Credits: 4 to 12

EEX 7980 Doctoral Research.
Credits: 1 to 15††

Education: Exceptional Child—Gifted

GRADUATE COURSES

EGI 6051 Education of the Gifted Child.
Credits: 4

EGI 6245 Program Development for the Gifted.
Credits: 4

Education: Mental Retardation

EMR 3011 The Mentally Retarded Child. F, W, S, SS.
Credits: 4; Prereq: EEX 3010 or consent of the instructor.
Educational, psychological, sociological, and medical aspects of children and adolescents with varying degrees of retardation.

EMR 4201 Curriculum for the Primary Level Educable Mentally Retarded. F, S.
Credits: 5; Prereq: EEX 3010 or equivalent.
The development of programs and curriculum for the education of primary educable mentally retarded pupils in the public schools.

EMR 4202 Curriculum for the Intermediate Level Educable Mentally Retarded. W, SS.
Credits: 5; Prereq: EEX 3010 or equivalent.
The curriculum and methodological considerations to be made for the intermediate educable mentally retarded pupils in the public schools.

EMR 4204 Curriculum for the Pre-Vocational Educable Mentally Retarded. F, S.
Credits: 5; Prereq: EEX 3010 or equivalent.
The development of curriculum and methodological considerations for the pre-vocational educable mentally retarded.

EMR 4214 Curriculum for the Vocational Educable Mentally Retarded. W, SS.
Credits: 5; Prereq: EEX 3010 or equivalent.
The development of curriculum and methodological considerations for the vocational educable mentally retarded.

EMR 4230 Education of the Trainable Mentally Retarded. F, W, S, SS.
Credits: 5; Prereq: EEX 3010 or equivalent.
The development of programs and curriculum for the trainable retarded in the public schools, institutions, and privately operated schools and workshops.

EMR 4330 Methods and Materials for the Severely Retarded.
Credits: 5; Prereq: EEX 3010 or equivalent.
Methods and materials for severely retarded children, youth and adults.

GRADUATE COURSES

EMR 6361 Education of the Mentally Retarded.
Credits: 4

EMR 6801 Practicum in Special Education: Mental Retardation.
Credits: 4 to 12

EMR 7936 Seminar: Mental Retardation.
Credits: 4

Education: Physical & Multiple Handicapped

EPH 4033 Issues in the Education of Children with Multiple Handicaps. W, S.
Credits: 4
Educational procedures, programming strategies, and curriculum development required for developmentally young children and youth with physical impairment including visual, auditory, medical, and behavioral problems.

GRADUATE COURSES

EPH 6185 Laboratory in Special Education Assessments of Severely Handicapped Children.
Credits: 3 to 5

EPH 6305 Educational Management of Physically Impaired/Multiply Handicapped.
Credits: 3 to 5

EPH 6395 Physiological Aspects of Physical/Multiple Handicaps.
Credits: 2 to 5

EPH 6411 Issues in the Education of Physically Impaired Multi-Handicapped Children.
Credits: 2 to 5

EPH 6942 Practicum in Special Education: Physically Impaired/Multiply Handicapped.
Credits: 4 to 12.

EPH 7936 Seminar: Education of the Severely Physically Impaired/Multiply Handicapped Child in residential institutions.
Credits: 2 to 4

EPH 7937 Seminar: Education of Physically Impaired/Multiply Handicapped Child in Public Schools.
Credits: 2 to 4

Education: Specific Learning Disabilities

GRADUATE COURSES

ELD 6111 Direct Assessment of Handicapped Learners.
Credits: 3

ELD 6112 Foundations in the Field of Specific Learning Disabilities.
Credits: 4

ELD 6211 Foundations of Clinical Teaching - Behavioral Analysis.
Credits: 4

ELD 6213 Behavior Analysis Applied to Developmental Deficits.
Credits: 4

ELD 6241 Program Designs for Children with Specific Learning Disabilities.
Credits: 4

ELD 6936 Seminar: Current Literature in Specific Learning Disabilities.
Credits: 1 to 2

ELD 6937 Seminar: Early Identification and Remediation of Specific Learning Disabilities.
Credits: 4

ELD 6944 Practicum in Special Education: Specific Learning Disabilities.
Credits: 4 to 16

ELD 6947 Laboratory: Evaluation in Special Education.
Credits: 3 to 6

ELD 7938 Seminar: Advanced Topics in Learning Disorders.
Credits 4 to 12

SUBJECT SPECIALIZATION
TEACHER EDUCATION
College of Education

INSTRUCTIONAL STAFF 1977-78

Todd, E.A., Chairman; Bolduc, E.J.; Bernard, D.H.; Carr, G.D.; Casteel, J.D.; Ellis, B.R.; Ferguson, R.C.; Flannery, M.E.; Gregory, J.W.; Hallman, C.L.; Henderson, C.A.; Hipple, T.W.; Kantowski, E.L.; Koran, J.J.; McGuire, V.; Newcomb, A.P.; Olson, W.; Rowe, M.B.; Timmerman, M.E.; Waldo, M.; Wright, R.G.

Art

ART 3100C Crafts. F, W, S, SS.
Credits: 4
Exploration in craft media such as leather, clay, reed, plastic, wood, and native materials. Attention directed toward creative design and function as well as craftsmanship. This course may be repeated once for credit.

Art Education

ARE 3312 Art Experiences with Children. F, S.
Credits: 4
Directed experiences with children. Planning, teaching, and evaluating art experiences.

ARE 4242 Professional Studies in Art Education. F, W, S, SS.
Credits: 5
Basic introduction to content in the field of Art Education. Requirements include appropriate field experiences, media workshops and participation in a continuing professional seminar. These studies cover the areas of: A. Foundations of Art Education, and B. Art Education Curriculum.

ARE 4243 Professional Studies in Art Education. F, W, S, SS.
Credits: 5
Study of content in the field of Art Education. Requirements include appropriate field experience, completion of specified competencies, and participation on a continuing professional seminar. These studies cover the areas of: A. Foundations of Art Education and B. Art Education Curriculum.

ARE 4244 Professional Studies in Art Education. F, W, S, SS.
Credits: 6
Study of content in the field of Art Education. Requirements include appropriate field experience, completion of specified competencies, and participation in a continuing professional seminar. These studies cover the areas of: A. Foundations of Art Education and B. Art Education Curriculum.

GRADUATE COURSES

ARE 5313 Teaching Art in Elementary School 1.
Credits: 4

ARE 5315 Teaching Art in Elementary School 2.
Credits: 4

ARE 6047 Foundations of Art Education.
Credits: 4

ARE 6141 Aesthetic Experience.
Credits: 4

ARE 6148 Curriculum in Art Education.
Credits: 4

ARE 6388 The Teaching of Art in Higher Education.
Credits: 4

ARE 6648 Art Education and Related Disciplines.
Credits: 4

Business Teacher Education

BTE 3365 Office Procedures for Teachers. F.
Credits. 4
The principles of office management, personnel management, and office procedures with implications for teachers of business.

BTE 3367 Office Machines and Data Processing for Teachers. F.
Credits 4
For prospective business teachers. Competencies in the teaching of office machines and data processing will be stressed.

BTE 4068 Principles of Business Education. F, W.
Credits: 4
Open only to business teachers and business teacher trainees. The principles, purposes, and programs of business education are studied in relation to the total secondary school program.

BTE 4360 Methods and Materials for Teaching Cooperative Distributive Education and Basic Business. F, W, SS.
Credits: 4; Prereq: EDF 3135.
Methods and materials for teaching bookkeeping, general business, business law, salesmanship, retailing, and business arithmetic in relation to cooperative distributive education. To be taken with ESE 4210 during F & W. May be taken separately during SS.

BTE 4364 Methods and Materials for Teaching Office Education Subjects. F, W.
Credits: 4; Prereq: EDF 3135.
Methods of teaching office education subjects including typewriting, shorthand, office and secretarial practice. To be taken concurrently with EDS 403.

BTE 4762 Competencies in Business Education. F.
Credits: 4
A survey of all available literature, text books, and teaching materials in the business education area will be made and competencies will be tested.

BTE 4949 Supervised Work Experience in Business. S.
Credits: 5 to 10
Practical experience in business correlated with curriculum design and instructional practices.

GRADUATE COURSES

BTE 6371 Methods and Materials for Block-Time Instruction in Office Education.
Credits: 4

BTE 6373 Materials and Methods of Teaching General Business.
Credits: 4

BTE 6378 Teaching Bookkeeping and Consumer Business Subjects.
Credits: 4

BTE 6379 Teaching Secretarial Studies.
Credits: 4

BTE 6671 Problems in Business Education.
Credits: 4

BTE 6935 Research Seminar in Business Education.
Credits: 4

BTE 6948 Seminar and Work Experience in Business Education.
Credits: 8

Education: Exceptional Child-Core Competencies

EEX 4141 Methods and Materials for Speech Therapy. W.
Credits: 5; Prereq: EDF 3110, ESE 4011, EDE 4203.
Presents methods for working as a speech therapist in public schools.

Education: General
GRADUATE COURSES

EDG 6910 Supervised Research.
Credits: 1 to 5††

EDG 6971 Master's Research.
Credits: 1 to 15††

EDG 7980 Doctoral Research.
Credits: 1 to 15††

Education: Industrial Arts

EIA 3280C Woodworking. F, W, S, SS.
Credits 4
Creative design, construction planning and execution, application of common tool techniques, wood finishing and related information. This course may be repeated once for credit.

EIA 3291C Metalcraft. S, SS.
Credits: 4
Creative experiences in metalcraft, tooling, etching, painting, tapping, engraving, enamel and silver jewelry. Emphasis upon techniques suitable for public school and therapy purposes. This course may be repeated once for credit.

Education Secondary

ESE 3034 Current Problems and Issues in Secondary Education. F, S.
Credits: 1; Prereq: Sophomore standing.
Current problems and issues presented by departmental faculty. May be repeated with change of content up to a maximum of 3 credits.

ESE 3932 Selected Topics in Secondary Education. F, W, S, SS.
Credits: 1 to 3; Prereq: Consent of the Department.
Introduction to various secondary curricula areas: English, Foreign Language, Mathematics, Science, Social Studies. The student will examine in his subject field current research and will participate in supervised field experiences. May be repeated for a maximum of 12 credits.

ESE 3940 Laboratory Experience in Secondary School Instruction. F, W, S, SS.
Credits: 2 to 5
Participation in the school laboratory situations with weekly conference or seminar on instructional procedures and curriculum planning to be arranged in lieu of regular class schedule. May be repeated with a change of content to a maximum of 10 credits.

ESE 4011 The Secondary School Today. F, W, S, SS.
Credits: 5; Prereq: Appropriate Psychological Foundations Course and admission to Advanced Professional Sequence.
Purposes and organization of the secondary school curriculum, guidance program, application of learning theory, student activities, evaluating and reporting student progress. Application must be made at least one month in advance of registration in Office of Undergraduate Studies, Room 134 Norman Hall. Field experiences may be required of students.

ESE 4210 Secondary School Curriculum and Organization. F, W, S, SS.
Credits: 4; Prereq: EDF 3135, ESE 4011; taken concurrently with appropriate methods course.

††Grading is on a S-U basis only.

SUBJECT SPECIALIZATION
TEACHER EDUCATION

Emphasis on: (1) planning, (2) classroom management, (3) motivation, and (4) evaluation. Field experiences may be required of students.

ESE 4905 Individual Study. F, W, S, SS.
Credits: 2 to 5; may be repeated with a change of content up to a maximum of 10 credits.
Open only to selected undergraduate students who wish to study an individual problem in depth which relates to their preparation as secondary education teachers. The project must be approved and supervised by a departmental faculty member.

ESE 4943 Student Teaching in the Secondary School. F, W, S.
Credits: 4 to 16††. May repeat to a maximum of 16; Prereq: See "Admission to Student Teaching in Any Teacher Education Program," and approval of the Secondary Education staff.
Student teaching in selected classrooms, special seminars, and continuous evaluation of teaching experiences. No other courses may be taken during the student teaching quarter when the student is registered for 16 quarter hours.

GRADUATE COURSES

ESE 6385 Supervision of Pre-Service Teachers.
Credits: 2 to 5

ESE 6415 Evaluation in the Secondary School Program.
Credits: 4

ESE 6905 Individual Work.
Credits: 2 to 5; maximum of 15 credits.

ESE 6920 Secondary Education Lecture Series.
Credits: 1; maximum of 3 credits.

ESE 6939 Special Topics.
Credits: 2 to 5; maximum of 15 credits.

ESE 6940 Supervised Teaching.
Credits: 1 to 5††

ESE 7922 Secondary Education Colloquium.
Credits: 1††; maximum of 6 credits.

ESE 7931 Seminar in Secondary Education.
Credits: 2 to 5; maximum of 15 credits.

Education: Vocational/Technical

EVT 4940 Student Teaching in Vocational, Technical, and Adult Education. F, W, S.
Credits: 4 to 16††; Maximum of 16 credits; Prereq: See "Admission to Student Teaching in Any Teacher Education Program."
Full time off-campus teaching in selected schools. No other courses may be taken during the student teaching quarter.

GRADUATE COURSE

EVT 6949 Cooperative Education.
Credits: 4

FOREIGN LANGUAGE EDUCATION

FLE 4333 Methods and Materials for Foreign Language. W.
Credits: 5; Prereq: EDF 3135, ESE 4011 taken concurrently ESE 4210.
Presents methods and materials of foreign language instruction, with emphasis on the newer techniques and materials.

GRADUATE COURSES

FLE 6337 Problems of Foreign Language Instruction in Secondary Schools.
Credits: 4

††Grading is on a S-U basis only.

FLE 6946 Practicum in Teaching Secondary School Foreign Language.
Credits: 4

Language Arts and English Education

LAE 4235 English in the Secondary School.
Credits: 4
Designed to help prepare teachers by a study of the content, materials, methods, and objectives, of the secondary English program.

LAE 4335 Methods and Materials for Language Arts. F, W, S, SS.
Credits: 5; Prereq: EDF 3135, ESE 4011 taken concurrently with ESE 4210.
Presents methods of teaching language arts in secondary schools.

GRADUATE COURSES

LAE 6301 Early Childhood Language Arts and Reading.
Credits: 4

LAE 6319 Language Arts in the Elementary School.
Credits: 4

LAE 6365 Language Arts: Language and Composition.
Credits: 4

LAE 6366 Language Arts: Literature.
Credits: 4

LAE 6714 Children's Literature in the Childhood Curriculum.
Credits: 4

LAE 6945 Practicum in Secondary School English.
Credits: 4

LAE 7936 Seminar in English Language Arts.
Credits: 4

MATHEMATICS EDUCATION

MAE 4330 Methods and Materials for Mathematics. F, W, S, SS.
Credits: 5; Prereq: EDF 3135, ESE 4011 taken concurrently with ESE 4210.
Presents methods of teaching mathematics in secondary schools.

GRADUATE COURSES

MAE 5318 Teaching Modern Math in Elementary School. F, S, SS.
Credits: 4

MAE 6115 Mathematics in the Elementary School.
Credits: 4

MAE 6138 Mathematics in the Secondary School.
Credits: 4

MAE 6512 Laboratory in Diagnosing Mathematics.
Credits: 4 to 8; maximum of 8.

MAE 6515 Individualizing Instruction in Elementary Mathematics.
Credits: 4

MAE 6636C Laboratory Approach to Mathematics.
Credits: 3 to 6

MAE 6947 Practicum in Teaching Secondary School Mathematics.
Credits: 4

MAE 7899 Mathematics Education Seminar.
Credits: 4

MUSIC EDUCATION

GRADUATE COURSES

MUE 6080 Foundations of Music Education.
Credits: 4

MUE 6146 Band Music in the Public Schools.
Credits: 4

MUE 6147 Orchestra Music in the Public Schools.
Credits: 4

MUE 6406 Music in the Elementary School.
Credits: 4

MUE 6416 Vocal Music in the Secondary School.
Credits: 4

MUE 7938 Music Education Seminar.
Credits: 4

SCIENCE EDUCATION

SCE 4330 Methods and Materials for Science. F, W.
Credits: 5; Prereq: EDF 3135, ESE 4011 taken concurrently with ESE 4210.
Presents methods of teaching science in secondary schools.

GRADUATE COURSES

SCE 5115 Teaching Science in Elementary School.
Credits: 4

SCE 6117 Science Education in the Elementary School.
Credits: 4

SCE 6140 The Teaching of Special Science Programs.
Credits: 3 to 6; maximum of 6 credits.

SCE 6237 Science in the Secondary School.
Credits: 4

SCE 6736 Evaluating Science Curricula in Secondary Schools.
Credits: 4

SCE 6947 Practicum in Secondary Science Curriculum.
Credits: 4

SCE 7238 Learning and Instruction in Secondary School Science.
Credits: 4

SCE 7933 Science Education Seminar.
Credits: 4

SCE 7949 Practicum in Learning and Instruction in Secondary School Science.
Credits: 4

SOCIAL STUDIES EDUCATION

SSE 4333 Methods and Materials for Social Studies. F, W, S, SS.
Credits: 5; Prereq: EDF 3135, ESE 4011 taken concurrently with ESE 4210.
Presents methods of teaching social studies in secondary schools.

GRADUATE COURSES

SSE 6117 Social Studies Education — Elementary School.
Credits: 4

SSE 6133 Social Studies in the Secondary School.
Credits: 4

SSE 6377C Practicum in Secondary Social Studies Instruction.
Credits: 4

SSE 6398 Microcriteria of Social Studies Teaching.
Credits: 4

SSE 7939 Seminar in Social Studies.
Credits: 4

Speech Education

SED 4335 The Teaching of Speech in the Secondary Schools. F, S.
Credits: 4; Prereq: 8 hours of Speech.
A practical philosophy of speech education as it functions at the secondary school level; methods of training in the speech arts.

ELECTRICAL ENGINEERING

College of Engineering

INSTRUCTIONAL STAFF 1977-78

Childers, D.G., Acting Chairman; Allen, E.J.; Bailey, R.L.; Bailey, T.L.; Boykin, W.H.; Bullock, T.E.; Chen, W.H.; Chenette, E.R.; Couch, L.W.; Davis, E.W.; Director, S.W.; Dominiak, K.E.; Doty, K.L.; Dove, D.B.; Elgerd, O.I.; Forsman, M.E. (Emeritus); Green, A.E.S.; Johnson, R.C.; Kaiser, W.F.; Kalman, R.E.; Kundel, T. (Emeritus); Latour, M.H.; Li, S.S.; Lindholm, F.A.; MacQuigg, D.R.; Neugroschel, A.; Nevis, A.H.; Nickelson, W.R.D. (Emeritus); O'Malley, J.R.; Paige, A.; Pepinsky, R.; Popov, V.M.; Priem, E.S. (Emeritus); Ramey, R.A.; Ryder, J.D.; Sah, C.T. (Lecturer); Sashoff, S.P. (Emeritus); Shaffer, C.V.; Smallwood, M.H. (Emeritus); Smith, E.F. (Emeritus); Smith, J.R.; Su, S.Y.W.; Sullivan, R.L.; Sutherland, A.D.; Teas, D.C.; Tou, J.T.; Uman, M.A.; van der Ziel, A.; Ward, G.D.; Warren, M.E.; Watson, J.K.; Wing, A.H. (Emeritus); Yii, R.; Zahn, M.; Zetrouer, W.R. (Emeritus).

Engineering: Electrical

EEL 3001 Introduction to Electrical Engineering. F, W, S, SS.
Credits: 5; Prereq: MAC 3313, PHY 2041.
An introduction to systems, circuits and devices in electrical engineering.

EEL 3001L Electrical Engineering Laboratory 1. F, W, S, SS.
Credits: 1; Coreq: EEL 3001.
Introductory electrical engineering laboratory in the electric instrumentation, devices, and systems.

EEL 3003 Elements of Electrical Engineering. F, S.
Credits: 5; Prereq: MAC 3313, PHY 2041.
An introduction to the theory and practice of electrical engineering for students not majoring in electrical engineering; circuits, machines, electronics, and systems.

EEL 3111 Circuits 1. F, W, S, SS.
Credits: 3; Prereq: EEL 3001.
Basic analysis of electric circuits.

EEL 3112, Circuits 2. F, W, S, SS.
Credits: 3; Prereq: EEL 3111.
Continuation of EEL 3111.

EEL 3135 Signals and Systems. F, W, S, SS.
Credits: 4; Prereq: EEL 3112.
Convolution, applications of Fourier and Laplace transforms, filters, noise, and state variable methods.

EEL 3211 Elements of Electric Energy Engineering 1. F, W, S, SS.
Credits: 3; Prereq: EEL 3001.
Rotating energy converters and transformers. Theory and design considerations. Simple system applications.

EEL 3212 Elements of Electric Energy Engineering 2. W, SS.
Credits: 3; Prereq: EEL 3211; Coreq: EEL 4201.
Static energy converters. Elements of bulk energy system operation under steady-state conditions.

EEL 3218 Electric Energy Engineering. F, S, SS.
Credits: 3; Prereq: EEL 3001.
An introduction to electric energy engineering for students not majoring in electrical engineering. Magnetics, D C machines, transformers, AC motors.

EEL 3303 Electronics 1. F, W, S, SS.
Credits. 4, Prereq: EEL 3001L; Coreq: EEL 3303
Electronic devices and circuits.

EEL 3303L Electronics Laboratory 1. F, W, S, SS.
Credits: 1; Prereq: EEL 3001; Coreq: EEL 3303
Electronic instrumentation devices and systems.

EEL 3304 Electronics 2. F, W, S, SS.
Credits. 5; Prereq: EEL 3303; EEL 3111; Coreq: EEL 4304
Continuation of EEL 3303.

EEL 3368 Electronics Systems and Instrumentation. F, S.
Credits: 4; Prereq: EEL 3001; Coreq: EEL 3001L
Fundamental techniques of electronic instrumentation and control systems. For nonelectrical engineering majors.

EEL 3368L Electrical Engineering for the Behavioral and Biological Sciences. W.
Credits: 5; Prereq: Consent of the instructor.
Introduction to electrical circuits and instrumentation.

EEL 3396 Introduction to Physical Electronics. F, S.
Credits. 4; Prereq: EEL 3301.
Introduction to the principles of semiconductor electron device operation.

EEL 3472 Electromagnetic Fields and Applications 1. F, S.
Credits: 4, Prereq: EEL 3001, MAC 3314.
Fundamentals of electromagnetic fields and waves.

EEL 3473 Electromagnetic Fields and Applications 2. W, SS.
Credits: 3; Prereq: EEL 3472.
Continuation of EEL 3472.

EEL 3751 Computational Techniques. F, S.
Credits: 4, Prereq: MAP 3302 and EIN 3114 or COP 3110 or COC 3110.
Applications of analog, digital and hybrid computers to computation and simulation.

EEL 4201L Electrical Energy Conversion Laboratory. F, W, S.
Credits: 1; Coreq: EEL 3212.
Electric conversion, devices, and systems.

EEL 4204 The Unified Theory of Electrical Machines 1. F.
Credits: 3; Prereq: EEL 3212.

EEL 4205 The Unified Theory of Electrical Machines 2. W.
Credits: 3; Prereq: EEL 4204.

EEL 4213 Electric Energy Systems 1. F, W.
Credits: 3; Prereq: EEL 3212.
Primary energy resources. Economical and ecological factors affecting energy conversion. Basic system requirements. Systems modeling of synchronous machines, transformers and transmission lines.

EEL 4214 Electric Energy Systems 2. W, S.
Credits: 3 Prereq: EEL 4213.
System operation under balanced steady-state conditions. Load flow analysis and control. Optimum operating conditions. Computational considerations.

EEL 4215 Electric Energy Systems 3. S.
Credits: 3; Prereq: EEL 4214.
System under fault conditions. Ultra-fast system transients. Medium-fast transients and short-circuit analysis. Electro-mechanical transients. Computational considerations.

EEL 4304L Electronics Laboratory 2. F, W, S, SS.
Credits: 1; Prereq: EEL 3303L; Coreq: EEL 3304.
Electronic instrumentation, devices and systems.

EEL 4310C Nonlinear Electronic Circuits. F, S.
Credits: 4
Design of nonlinear shaping circuits. Counting and gating circuits. Laboratory.

EEL 4331C Microelectronics. W, SS.
Credits: 4, Prereq: EEL 3396.
Principles of microelectronics. Laboratory.

EEL 4373 Transistor Electronics. F, S.
Credits: 3; Prereq: or Coreq Undergraduate course in electronics or consent of the instructor
The electrical characteristics and circuit application of transistors.

EEL 4373L Transistor Electronics Laboratory. F, S.
Credits: 1; Coreq: EEL 4373.
The laboratory for the corequisite EEL 4373, Transistor Electronics.

EEL 4431 Microwave Circuits and Technology. W.
Credits: 3; Prereq: EEL 3472.

EEL 4436 Microwave Techniques. F, S.
Credits: 4; Prereq: EEL 3473; Coreq: EEL 4436L.
Waveguides and resonant cavities. Methods of generating, transmitting, and receiving microwaves.

EEL 4436L Microwave Laboratory. F, S.
Credits: 1; Coreq: EEL 4436
The laboratory for the corequisite course EE 456, Microwave Techniques.

EEL 4440C Electro-Optical Devices & Systems. S.
Credits: 3; Prereq: EEL 3303, EEL 3472.
Laser oscillators, amplifiers, modulators, detectors. Interfacing. System optimization. Applications: integrated optics, remote sensing, etc. Laboratory.

EEL 4461 Antenna Systems. W.
Credits: 4; Prereq: EEL 3473 or equivalent.
Electromagnetic field theory and its application to antenna design.

EEL 4479 Applications of Magnetism. F, S.
Credits: 4
Properties and processes in magnetic materials are introduced through examples such as inductors, pulse transformers, memory elements, microwave components, etc.

EEL 4514L Communication Laboratory. F, W, S, SS.
Credits: 1; Prereq: EEL 4304L; Coreq: EEL 4514.
Communication circuits and radio frequency instruments, devices, and measurements.

EEL 4514 Communications Systems and Components. F, S.
Credits: 4; Prereq: EEL 3304 and EEL 3135.
Radio, television, radar and telemetry systems.

EEL 4516 Noise in Devices and Communication Systems. F, S.
Credits: 5; Prereq: EEL 4514.
Origin, characterization, and measurement of random noise. Calculation of signal-to-noise ratios and probability of errors for communication systems.

EEL 4657 Linear Control Systems. F, W, S, SS.
Credits: 4; Prereq: EEL 3135 or consent of instructor.
Theory and design of linear control systems.

EEL 4712C Digital Computer Principles 1. F, W, S, SS.
Credits: 5; Prereq: EEL 3751 or CDA 3101.
Introduction to logic design with electronic digital integrated circuits. Applied switching algebra. Sequential circuits. Laboratory.

EEL 4713C Digital Computer Principles 2. F, S, SS.
Credits: 5; Prereq: EEL 3751 or CDA 3101; concurrent enrollment in EEL 4714 is suggested.

††Grading is on a S-U basis only.

The use of electronic digital modules to design computers. Organization and operation of computers. Hardware/software tradeoffs. Design of computer interfacing. Laboratory.

EEL 4714C Digital Computer Principles 3. F, S.
Credits: 5; Prereq: EEL 3751 or CDA 3101; concurrent enrollment in EEL 4713 is suggested.
Hardware/software tradeoffs in computer design. Minicomputer operation and programming. Software design for minicomputer systems and interfacing. Laboratory.

EEL 4914L Electrical Engineering Projects Laboratory. F, W, S, SS.
Credits: 1; Prereq: EEL 4304, EEL 4201L, or EEL 4514.
This is an advanced undergraduate laboratory involving engineering applications in the various areas of electrical engineering. It may be repeated for additional credit.

EEL 4905 Individual Problems in Electrical Engineering. F, W, S, SS.
Credits: 1 to 5; Prereq: Recommendation of Department Chairman.
Selected problems or projects in the student's major field of engineering study. May be repeated with a change of content up to a maximum of 12 credits.

EEL 4930C Special Topics in Electrical Engineering. F, W, S, SS.
Credits: 1 to 6; Prereq: Permission of instructor.
Special courses covering selected topics in electrical engineering. May be repeated with change of content up to a maximum of 6 credits.

EEL 4941 Creative Problem Solving. F.
Credits: 3
Development of a problem solving approach for complex electrical engineering problems with emphasis on creative techniques and the writing of meaningful engineering reports.

EEL 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: Freshman year.
Practical co-op engineering work under approved industrial supervision.

GRADUATE COURSES

EEL 5134 Analysis of Non-linear Systems.
Credits: 3

EEL 5161 Computational Techniques for Circuit Analysis. F.
Credits: 4

EEL 5182 State Variable Methods in Linear Systems.
Credits: 4

EEL 5370 Applied Electronics. W, SS.
Credits: 4

EEL 5485 Physical Principles of Magnetism. W.
Credits: 4

EEL 5562 Pictorial Information Processing Principles. F.
Credits: 3

EEL 5718 Computer Communcations.
Credits: 3

EEL 5719C Digital Filtering.
Credits: 5

EEL 5761 Hardware/software Interaction: Time Sharing System. W.
Credits: 4

EEL 5762 Modular Design of Digital Processors. S.
Credits: 3

††Grading is on a S-U basis only.

EEL 5768 Principles of Computer Interfacing. W.
Credits: 3

EEL 5769 Hardware/software Interactions: Non-numeric Processing. S.
Credits: 3

EEL 5821 Principles of Information Science. W.
Credits: 3

EEL 5905 Individual Work.
Credits: 1 to 6

EEL 5934 Special Topics in Electrical Engineering. F, W, S, SS.
Credits: 1 to 4

EEL 6156 Advanced Circuit Analysis.
Credits: 3

EEL 6157 Generalized Network Theory.
Credits: 3

EEL 6162 Computer-Aided Circuit Design.
Credits: 4

EEL 6170 Elements of Linear Systems.
Credits: 3

EEL 6171 Advanced System Theory 1.
Credits: 4

EEL 6172 Advanced System Theory 2.
Credits: 3

EEL 6264 Advanced Electric Energy Systems 1.
Credits: 3

EEL 6265 Advanced Electric Energy Systems 2.
Credits: 3

EEL 6266 Advanced Electric Energy Systems 3.
Credits: 3

EEL 6267 Advanced Electromechanical Energy Conversion.
Credits: 3

EEL 6311 Electronic Circuits 1.
Credits: 3

EEL 6312 Electronic Circuits 2.
Credits: 3

EEL 6313 Electronic Circuits 3.
Credits: 3

EEL 6381 Models and Applications of Solid-State Devices 1.
Credits: 3

EEL 6382 Semiconductor Physical Electronics 1.
Credits: 3

EEL 6383 Semiconductor Physical Electronics 2.
Credits: 3

EEL 6384 Semiconductor Physical Electronics 3.
Credits: 3

EEL 6388 Fluctuation Phenomena 1.
Credits: 3

EEL 6397C Semiconductor Junction Devices 1.
Credits: 3

EEL 6398 Semiconductor Junction Devices 2.
Credits: 3

EEL 6399 Models and Applications of Solid-State Devices 2.
Credits: 3

EEL 6442 Physical Optics for Engineers.
Credits: 3

EEL 6443 Electro-Optical Devices.
Credits: 3

EEL 6444 Electro-Optical Systems.
Credits: 3

EEL 6450 Wave Propagation in Anisotropic Media.
Credits: 3

EEL 6486 Electromagnetic Field Theory and Applications 1.
Credits: 3

EEL 6487 Electromagnetic Field Theory and Applications 2.
Credits: 3

EEL 6503 Signal Representation and Design.
Credits: 5

EEL 6505 Digital Signal Processing.
Credits: 5

EEL 6509 Space Communications.
Credits: 5

EEL 6524 Statistical Decision Theory.
Credits: 5

EEL 6534 Theory of Communication 1.
Credits: 5

EEL 6535 Theory of Communication 2.
Credits: 5

EEL 6544 Noise in Linear Systems.
Credits: 5

EEL 6614 Modern Control Theory 1.
Credits: 3

EEL 6615 Modern Control Theory 2.
Credits: 3

EEL 6616 Modern Control Theory 3.
Credits: 3

EEL 6622 Nonlinear Control Systems.
Credits: 3

EEL 6733 Analysis and Synthesis of Switching Circuits.
Credits: 3

EEL 6741C Microprocessors: Architectures and Applications, Laboratory.
Credits: 4

EEL 6767 Computing Machine Theory.
Credits: 3

EEL 6824 Foundations of Information Science.
Credits: 3

EEL 6825 Pattern Recognition Theory and Applications 1.
Credits: 3

EEL 6826 Pattern Recognition Theory and Applications 2.
Credits: 3

EEL 6843 Applications of Automata Theory.
Credits: 3

EEL 6905 Individual Work.
Credits: 1 to 6

EEL 6910 Supervised Research.
Credits: 1 to 5††

EEL 6932 Graduate Seminar.
Credits: 1††; Maximum of 4 credits.

EEL 6935 Special Topics in Electrical Engineering.
Credits: 1 to 6; Maximum of 18 credits.

EEL 6971 Master's Research.
Credits: 1 to 15††

EEL 7827 Topics in Information Storage and Retrieval.
Credits: 3

EEL 7980 Doctoral Research.
Credits: 1 to 15††

Engineering: Electrical Lab and Related Areas

ELR 4116 Electric Energy System Instrumentation. F, S.
Credits: 3
Instrumentation and equipment for control and protection of electric power system components. Carrier and other types of communication systems and their applications to the electric power industry.

ELR 4371 Principles of Solid State Devices and Practice 1. F.
Credits: 3
Physical principles of modern solid state devices and their practical applications.

ELR 4372 Principles of Solid State Devices and Practice 2. W.
Credits: 3; Prereq: ELR 4371.
Continuation of ELR 4371.

GRADUATE COURSES

ELR 5112 Automatic Speech Processing. SS.
Credits: 3

ELR 5210 Cybernetics. F, S.
Credits: 5

ELR 6225 Electrical Activity of the Nervous System.
Credits: 3

ELR 6226 Biophysical Models of Nerve Impulse Propagation.
Credits: 3

ELR 6940 Supervised Teaching.
Credits: 1 to 5††

ENGINEERING COMMON COURSES
College of Engineering

Engineering: Electrical
GRADUATE COURSES

EEL 6447L Gas Lasers and Their Engineering Application.
Credits: 4

EEL 6452 Plasma Theory.
Credits: 4

EEL 6452L Plasma Laboratory.
Credits: 3

EEL 6451 Introduction to Plasmas.
Credits: 3

Engineering: General

EGN 1002 Introduction to Engineering. F, W, S.
Credits: 1
The role of the engineer in today's society. A survey of the fields of engineering and technology.

EGN 1006 Case Studies in Engineering. F, W, S.
Credits: 1
A continuation of EGN 1002 with emphasis on a particular engineering discipline.

EGN 2845 Mechanics of Sailing. S.
Credits: 2
Hydrodynamic, aerodynamic and other forces that act on a sailing vessel. Inquires into underwater drag and lift as well as such aerodynamic aspects as apparent wind, stall, and sail interaction. Introduces the concepts of lee and weather helm, live and fixed ballast, and centers of gravity and buoyancy.

EGN 3023 Introduction to Physical Systems.
Credits: 2
Selected engineering problems, set in a professional context and solvable by elementary numerical methods using basic physical laws and common sense. The course provides a relationship between the physical sciences, mathematics and engineering analysis.

EGN 3080 Man, Technology, and Civilization.
Credits: 2
The influence of engineering and technological progress upon cultural, economic and political history; the interrelationship between man's technological and social development.

EGN 3082 Energy — From Nature to Man. W.
Credits: 2
A course on energy technology aimed primarily at the nonengineering student. The approach is quantitative, but at a modest math level. Topics include: Natural resources, what they are and how much remain; ways and means of utilizing and conserving energy; new forms of energy, including solar, geothermal, nuclear.

EGN 3353 Fluid Mechanics. F, W, S, SS.
Credits: 4; Prereq: EGM 3400, MAC 3314.
Statics and dynamics of incompressible and compressible fluids. Equations of continuity, energy and momentum with application to viscous and inviscid flows. Dimensional analysis.

EGN 4036 Engineering Ethics and Professionalism. W.
Credits: 3
A discussion of professionalism and ethics in the practice of engineering. The development of the concepts of professionalism and ethics and the traditional practice of these concepts are considered in relation to changing situations in practice in a variety of employment conditions. Case histories will be discussed.

EGN 4730 Direct Energy Conversion Engineering 1. F, S.
Credits: 3; Prereq: Senior status in engineering.
A new technology resulting from space related activities for generating electrical energy by methods other than classic rotating machines. Engineering fundamentals. Thermoelectrics and thermionics.

EGN 4731 Direct Energy Conversion Engineering 2. W.
Credits: 3; Prereq: EGN 4730. Coreq: EGN 4732.
Photovoltaic, fuel cell, and magnetohydrodynamic direct conversion systems.

EGN 4732L Direct Energy Conversion Engineering Laboratory. W.
Credits: 1 to 3; Prereq: EGN 4730 and instructor permission. Coreq: EGN 4731.
A creative project laboratory. Experimental studies of DEC devices and systems. Familiarization with a sampling of DEC devices and systems.

EGN 4735 Solar-Electric Engineering. W.
Credits: 3; Prereq: Senior status in Engineering.
Theory and applications of generating electric energy from the sun including thermal, direct, wind, sea, biological methods. Small and large solar-electric systems and energy storage.

GRADUATE COURSES

EGN 6740 Surface Hydrology.
Credits: 4

EGN 6741 Operational Hydrology 1.
Credits: 4

EGN 6742 Operational Hydrology 2.
Credits: 4

Engineering: Mechanical

GRADUATE COURSES

EGM 5816 Intermediate Fluid Dynamics.
Credits: 3

EGM 6250 Theoretical Acoustics. W.
Credits: 3

EGM 6321 Principles of Engineering Analysis 1.
Credits: 3

EGM 6322 Principles of Engineering Analysis 2.
Credits: 3

EGM 6323 Principles of Engineering Analysis 3.
Credits: 3

EGM 6324 Principles of Engineering Analysis 4.
Credits: 3

EGM 6325 Principles of Engineering Analysis 5.
Credits: 3

EGM 6811 Theory of Fluid Flow 1.
Credits: 4

EGM 6812 Theory of Fluid Flow 2.
Credits: 3

EGM 6813 Theory of Fluid Flow 3.
Credits: 4

EGM 6835 Boundary Layer Theory.
Credits: 4

EGM 6845 Theories of Turbulent Flows.
Credits: 4

Engineering: Materials

EMA 4004 Product Liability and Engineering Expertise. F.
Credits: 2
Product liability law, concept of defect failure analysis, safety standards, legal procedures and the expert witness.

History: General

HIS 4470 History of Technology I.
Credits: 4
This course examines the development of technology and engineering from antiquity to the Industrial Revolution. Emphasis will be on the relationship of the development of technology to the growth of western civilization.

HIS 4471 History of Technology II.
Credits: 4
This course examines the development of technology and engineering from the beginning of the Industrial Revolution to the early twentieth century. Emphasis will be on the relationship of the development of technology to the cultural growth of western civilization.

HIS 4472 History of Technology III.
Credits: 4
This course investigates the development of technology and engineering in North America from about 1700 to the early twentieth century. It

††Grading is on a S-U basis only.

is concerned primarily with the influence of the growth of technology on the developing pattern of life in the United States.

ENGINEERING GRAPHICS

College of Engineering

INSTRUCTIONAL STAFF 1977-78

Gaither, R.B., Chairman; Klement, F.W.; Smith, J.H.; Watts, E.H.

EGN 1110C Elementary Engineering Graphics. F, W, S, SS.
Credits: 2
Representation and analysis of systems in orthographic projection. Engineering drawing as a descriptive tool.

EGN 1111C Engineering Graphics. F, W, S, SS.
Credits: 3
This three hour course is identical to the 2 hour EGN 1110, plus the one hour EGN 1130.

EGN 1123 Professional Drafting. W.
Credits: 2; Prereq: EGN 1111.
Professional topics in drafting. Emphasis on developing drafting as a professional skill.

EGN 1126 Design Processes in Engineering. F, W, S, SS.
Credits: 2; Prereq: A basic engineering graphics course.
Introductory design projects, and graphical solutions of engineering problems.

EGN 1130 Descriptive Geometry. F, W, S.
Credits: 1; Prereq: EGN 1110 or equivalent training in mechanical drawing.
True length of lines; true shape of planes; true angles; revolution; intersections; developments.

EGN 4114 Engineering Graphical Analysis. S.
Credits: 3; Prereq: MAC 3314, EGM 3511 and departmental graphics requirement.
The use of graphics in analytical design, graphical methods in the solution of specialized problems including structural analysis, machine dynamics and synthesis.

ENGINEERING SCIENCE AND MECHANICS

College of Engineering

INSTRUCTIONAL STAFF 1977-78

Millsaps, Knox, Chairman; Anderson, R.C.; Bisplinghoff, R.L.; Boykin, W.H., Jr.; Clarkson, M.H.; Cristescu, N.; Doddington, H.W.; Ebcioglu, I.K.; Edson, C.G.; Eisenberg, M.A.; Fearn, R.L.; Green, A.E.S.; Grinter, L.E.; Hammack, J.L., Jr.; Hartley, C.S., Hemp, G.W.; Hoover, J.W.; Kalman, R.E.; Keefer, D.R.; Kurzweg, U.H.; Leadon, B.M.; Lindgren, E.R.; Lu, S.Y.; Malvern, L.E.; Milton, J.E.; Nevill, G.E., Jr.; Partheniades, E.; Ross, C.A.; Sierakowski, R.L.; Walsh, E.K.

Building Construction

BCN 2400 Construction Mechanics 1. F, W, S, SS.
Credits: 5; Prereq: MAC 2223, PHY 2004.
The study of external forces, truss analysis and geometric properties of members as applied to the design of structures. Primarily for building construction majors.

BCN 3401 Construction Mechanics 2. F, W, S, SS.
Credits: 5; Prereq: MAC 2223, PHY 2004, BCN 2400.
The study of stresses and strains and external forces on indeterminate members as applied to the design of structures. Primarily for BCN majors.

Engineering: Mechanical

EGM 3311 Introduction to Engineering Analysis. F, W, S, SS.
Credits: 3; Coreq: MAC 3314.
Formulation of mathematical models of physical systems resulting in ordinary differential equations. Solution methods for linear and nonlinear ordinary differential equations with constant coefficients. Laplace transform techniques. Emphasis on applications.

EGM 3400 Engineering Mechanics-Dynamics. F, W, S, SS.
Credits: 3 to 4; Prereq: EGM 3511, MAC 3314.
Dynamics of particles and rigid bodies for rectilinear translation, curvilinear motion, rotation and plane motion. Principles of work and energy, also impulse and momentum.

EGM 3511 Engineering Mechanics-Statics. F, W, S, SS.
Credits: 3 to 5; Prereq: PHY 2040, MAC 3313.
Reduction of force systems. Equilibrium of particles and rigid bodies. Vector methods. Application to structures and mechanisms. Topics in dynamics and mechanics of materials with 5 hours registration.

EGM 3520 Mechanics of Materials. F, W, S, SS.
Credits: 3 to 4; Prereq: EGM 3511, MAC 3314.
Stress and strain at a point, stress-strain relations. Systems subject to axial load, torsion, and bending. Design concepts, indeterminate structures, applications.

EGM 4000 Engineering Design 1. W.
Credits: 4; Prereq: Senior standing in Engineering Science or permission of instructor.
Emphasis on overall design and analysis of complex engineering systems. Materials, structural, chemical, control, nuclear, mechanical, electrical, and operational problems; cost analysis.

EGM 4001 Engineering Design 2. S.
Credits: 4; Prereq: EGM 4000.
Continuation of EGM 4000.

EGM 4008 Introduction to Engineering Optics. F.
Credits: 4; Prereq: PHY 2042.
Definition of the optical system. Calculation of radiometric quantities. Line and gray body sources. Atmospheric transmission. Selected topics in optics. Calculation of radiant flux through an optical system.

EGM 4009 Engineering Optics. W.
Credits: 4; Prereq: EGM 4008.
Optical modulation. Detectors, their selection and use. Noise. Signal processing. Design and analysis of an optical system.

EGM 4200 Fundamental Vibration Analysis. W, SS.
Credits: 4; Prereq: EGM 3400 and EGM 3520.
Undamped free and forced vibrations of systems on one degree of freedom, damped vibrations. Vibrations of systems with more than one degree of freedom. Shock and vibration isolation. Instruments for vibration analysis.

EGM 4312 Engineering Analysis 1. F, W.
Credits: 4; Prereq: EGM 3311 or MAP 3302.
Application of vector algebra and calculus, and complex variables to solid and fluid mechanics, electromagnetism, and heat and mass transfer. Introduction to conformal mapping.

EGM 4313 Engineering Analysis 2. W, S.
Credits: 4; Prereq: EGM 3311 or MAP 3302, PHY 2042.
Formulation of mathematical models of physical systems resulting in systems of ordinary differential equations. Problems resulting in equations with variable coefficients. Matrix and series solution techniques with emphasis on applications.

EGM 4314 Engineering Analysis 3. F, S.
Credits: 4; Prereq: EGM 4313.
Formulation of mathematical models of physical systems resulting in partial differential equations. Solution methods including separation of variables, exponential techniques, and Fourier series. Application to boundary value problems in heat conduction, diffusion, fluid mechanics and wave propagation.

EGM 4560 Mechanical Properties of Materials. S.
Credits: 3; Prereq: EGM 3520.
Introduction to the science of engineering materials. Application of solid state mechanics to mechanical properties of materials including elasticity, plasticity, fracture, creep and relaxation.

EGM 4901 Special Topics in Engineering Science and Mechanics. F, W, S, SS.
Credits: 1 to 6. Prereq: Permission of instructor.
May be repeated with change in content to a maximum of 12 credits.

EGM 4905 Individual Study in Engineering Science and Mechanics. F, W, S, SS.
Credits: 1 to 6; May be repeated to a maximum of 12 credits. Prereq: Recommendation of Department Chairman.
Selected problems or projects in the student's major field of engineering study.

EGM 4910L Laboratory Projects. F, W, S, SS.
Credits: 3; Prereq: Any one of EAS 4002, ECH 3264, EGN 3353 or EML 3101.
Experimental analysis of individually selected laboratory or field projects in concurrence with lectures on the principles of scientific research.

EGM 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: 4EG Classification.
One term industrial employment, including extra work according to a pre-approved outline. Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

GRADUATE COURSES

EGM 5005 Laser Principles and Applications. W.
Credits: 4

EGM 5111L Experimental Stress Analysis 1. W.
Credits: 3

EGM 5421 Modern Techniques of Structural Dynamics 1. S.
Credits: 3

EGM 5430 Intermediate Dynamics. F.
Credits: 3

EGM 5533 Advanced Mechanics of Solids and Structures. S.
Credits: 3

EGM 5550 Elevated Temperature Stress Analysis. F.
Credits: 3

EGM 5905 Individual Study. F, W, S, SS.
Credits: 1 to 9; Maximum of 9 credits.

EGM 6215 Theory of Structural Vibrations 1.
Credits: 4

EGM 6225 Theory of Structural Vibrations 2
Credits: 4

EGM 6235 Nonlinear Vibrations 1.
Credits: 4

EGM 6236 Nonlinear Vibrations 2.
Credits: 3

EGM 6245 Random Vibrations.
Credits: 3

EGM 6341 Numerical Methods of Engineering Analysis 1.
Credits: 3

EGM 6342 Numerical Methods of Engineering Analysis 2.
Credits: 3

EGM 6351 Introduction to Finite Element Methods.
Credits: 4

EGM 6422 Modern Techniques of Structural Dynamics.
Credits: 3

EGM 6444 Advanced Dynamics 1.
Credits: 3

EGM 6445 Advanced Dynamics 2.
Credits: 3

EGM 6460 Stability of Dynamical Systems.
Credits: 3

EGM 6476 Inertial Guidance and Control
Credits: 3

EGM 6478 Nonlinear Control Systems.
Credits: 3

EGM 6551 Introduction to Theory of Thermal Stresses.
Credits: 3

EGM 6584 Principles of Mechanics in Biomedical Engineering.
Credits: 3

EGM 6611 Continuum Mechanics 1.
Credits: 3

ENGINEERING SCIENCE AND MECHANICS

EGM 6612 Continuum Mechanics 2.
Credits: 3

EGM 6613 Advanced Continuum Mechanics.
Credits: 3

EGM 6652 Introduction to Elasticity.
Credits: 3

EGM 6653 Theory of Elasticity 1.
Credits: 3

EGM 6654 Theory of Elasticity 2.
Credits: 3

EGM 6670 Introduction to Inelastic Behavior of Materials.
Credits: 3

EGM 6671 Theory of Inelastic Continuum.
Credits: 3

EGM 6682 Theory of Viscoelasticity.
Credits: 3

EGM 6683 Dynamic Plasticity.
Credits: 3

EGM 6684 Special Topics in Dymanic Plasticity.
Credits: 1 to 4

EGM 6716 Theory of Plates.
Credits: 3

EGM 6717 Introduction to Plates and Shells.
Credits: 3

EGM 6718 Methods of Analysis for Plates and Shells.
Credits: 3

EGM 6726 Theory of Shells.
Credits: 3

EGM 6736 Theory of Elastic Stability.
Credits: 4

EGM 6905 Individual Study.
Credits: 1 to 9

EGM 6910 Supervised Research.
Credits: 1 to 5††

EGM 6934 Special Topics in Engineering Mechanics.
Credits: 1 to 9

EGM 6936 Graduate Seminar.
Credits: 1††

EGM 6940 Supervised Teaching.
Credits: 1 to 5††

EGM 6971 Master's Research.
Credits: 1 to 15††

EGM 7980 Doctoral Research.
Credits: 1 to 15††

ENGINEERING TECHNOLOGY
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Land Surveying Technology—Gibson, D.W.
Materials Technology—Connell, R.G.

Engineering Tech: Civil

ETC 3323C Engineering Surveying 2. F, W.
Credits: 2; Prereq: ETC 3353
Location and layout of highways, linear and broad area projects. Curves, spirals, turnouts, superelevation, slope staking.

ETC 3331L Photogrammetry 1. F.
Credits: 3
Photo interpretation and basic measurements, geometry of vertical photographs, precise photo measurements, stereo plotter operation, air photo interpretation of basic cultural and natural features.

ETC 3326 Land Surveying Computations. F.
Credits: 3; Prereq: MAC 1132.
The principles of geometry applied to land surveying computations; manual and computer techniques; coordinates, areas, volumes, intersections, circular curves, compound and reverse curves; higher geometry and spherical trigonometry.

ETC 3334 Land Surveying Principles. F, W,
Credits: 4; Prereq: ECI 3515.
Land boundaries, corners, areas; writing land descriptions, identification of land parcels; legal principles of boundary location, the government land survey system.

ETC 3334L Land Surveying Practice. S, SS.
Credits: 3; Prereq: ETC 3334.
A study of land survey practice; the lot survey, the sectional survey, the water boundary survey; office and business practices; professional standing.

ETC 3340L Topography and Mapping. W, S.
Credits: 2; Prereq: ECI 3515.
Surveying for mapping, field surveys for topographic maps, manuscript compilation, map reproduction, map projections.

ETC 3342L Geodetic Surveying. S.
Credits: 3; Prereq: ETC 3353.
Precise horizontal surveys of large extent; latitudes, longitudes, and azimuth; state plane coordinate systems; celestial observations for latitude and azimuth; geodetic computation; electronic measuring devices.

ETC 3344L Subdivisions. S, SS.
Credits: 3; Prereq: EVS 4215.
Subdivision boundary and lot calculations, manual and computer, plat drafting; legal requirements; planning for lot grades, lot size and lot layout.

ETC 3353 Control Surveying. W.
Credits: 4; Prereq: ECI 3515 and MAC 3224.
Horizontal and vertical control surveys, error theory, precise traverse, triangulation, trilateration, adjustment theory, least squares adjustments.

ETC 4332L Photogrammetry 2. W.
Credits: 2; Prereq: ECI 3515 and ETC 3331.
Advanced stereo plotter operation, geometry of tilted photographs, aerotriangulation by strip formation and adjustment.

Engineering Tech: General

ETG 3935 Special Shops and Laboratories in Engineering Technology. F, W, S, SS.
Credits: 1 to 3
New shop courses or laboratories for developing Engineering Technology program. May be repeated up to a total of 10 credits.

ETG 3945 Supervised Work Experience in Engineering Technology. F, W, S, SS.
Credits: 1 to 5
Practical experience in engineering technology field under planned program. May be repeated up to 15 credits.

ETG 4905 Individual Work. F, W, S, SS.
Credits: 1 to 6
Special Courses, problems or projects needed to develop program in Engineering Technology. May be repeated up to 12 credits with change in content.

ETG 4940 Supervised Internship in Engineering Technology. F, W, S, SS.
Credits: 1 to 5
Practical work in College of Engineering shops or laboratories as part of required curriculum in Engineering Technology. May be repeated up to 15 credits.

ETG 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5
Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

Engineering Tech: Industrial

ETI 3411C Machine Shop 1. F, W, S, SS.
Credits: 1
Shop safety, tool sharpening, measurements, cutting tool theory, reamers and threads, use of shapers and lathes.

ETI 3412C Machine Shop 2. W, S, SS, F.
Credits: 1; Prereq: ETI 3411C.
Use of hand tools, cleaning and surface treatment, use of milling machines, drills, power saws and grinders.

ETI 4405 Metals Joining Technology 1. F.
Credits: 3; Prereq: EMA 4121, 4122, 4124.
Laboratory projects in the technology of metal joining including: soldering, welding, brazing, bolting, riveting, adhesive bonding, etc.

ETI 4406 Metals Joining Technology 2. W.
Credits: 3; Prereq: EMA 4121, 4122, 4124.
Continuation of ETI 4405.

ETI 4407 Metals Joining Technology 3. S.
Credits: 3; Prereq: EMA 4121, 4122, 4124.
Continuation of ETI 4405.

Engineering Tech: Mechanical

ETM 4801L Heat Treating of Metal Laboratory. W.
Credits: 1
The technology of heat treating of metals including annealing, hardening of steels and irons, precipitation hardening, etc.

††Grading is on a S-U basis only.

ETM 4804L Laboratory in Nondestructive Testing Techniques. S.
Credits: 2
The technology of non-destructive testing techniques including: radiography, magnetic particle inspection, ultrasonic inspection, etc.

Environmental Science

EVS 4215 Hydraulics and Hydrology. F, W.
Credits: 3
Fluids at rest and in motion. Study of dams, pipelines and open channels. Pumps and turbines. Steady flow and dimensional analysis. Hydrologic cycle. Flood routing. Groundwater; flow nets and saltwater intrusion.

ENGLISH
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Hellstrom, W., Chairman; Anderson, B.J.; Beirne, R.M.; Beyette, T.K.; Bigelow, G.E.; Bloodworth, B.E.; Brantley, R.E.; Bredahl, A.C.; Burns, L.; Byron, K.H.; Carnell, C.S.; Carpenter, R.H.; Cech, J.; Childers, W.C.; Clark, I.G.; Closson, D.; Cranney, A.G.; Crews, H.E.; Deakin, M.F.; Duckworth, A.M.; Foreman, R.C.; Frazer, W.L.; Gale, S.H.; Gordon, A.M.; Green, R.H.; Haskins, J.; Herbert, T.W.; Hetrick, L.A.; Hill, M.A.; Hodges, J.R.; Holden, E.S.; Homan, S.R.; Kelly, D.L.; Kendall, K.E.; Kershner, R.B.; Kirkpatrick, M.S.; Langford, A.G.; Lisca, P.; Locke, D.M.; Lopez, T.; Losano, W.A.; McCarthy, K.M.; McCrea, B.R.; McDavis, D.; Malvern, M.; Murphree, A.A.; Neale, J.R.; Nelson, M.D.; New, M.; Penrod, J.A.; Perlette, J.M.; Pickard, J.B.; Robinson, W.R.; Sciadini, F.; Scott, J.C.; Shaw, H.B.; Smith, J.; Snodgrass, S.G.; Straus, B.R.; Taylor, F.; Thompson, I.S.; Thompson, R.M.; Thomson, R.S.; Tillman, C.A.; Twitchell, J.B.; Ulmer, G.L.; Vogel, J.F.; Waldo, T.R.; Wear, R.A.; Williams, A.L.; Wyrick, J.C.

Beginning students are normally expected to complete ENC 1102 and two additional courses from among ENC 1418, ENG 1200, ENG 1400, ENG 1710, and ENG 1210, which are designed for Freshmen. Qualified students, however, may substitute more advanced courses with the approval of a departmental adviser.

The freshman English requirement may also be satisfied by the CLEP examination. Credit acquired through CLEP examination represents an attainment of a minimum knowledge of the subject as designated and mandated by state interinstitutional agreement. *Credit so earned must be acquired before enrollment at the University of Florida.*

Students in the lower division who intend to major in English should consult as soon as possible with a departmental adviser in 4008 GPA or 358 Little Hall.

There are two programs which English majors may pursue according to their educational objectives.

1. *The Departmental Major:* The student will take 48 quarter hours of English courses including Freshman English, or the equivalent; 36 of these hours will be in courses numbered 3000 and above. Among these 36 hours the student's program will include one course in English literature before 1800; one course in literary theory, criticism, or genres; and one course in the study of language or the practice of writing. *For specific courses see an English adviser.*

2. *The Certification Major:* For those students who wish to be certified to teach in the secondary schools, minimum requirements are (a) Survey of English Literature—ENL 2031, ENL 2034, ENL 2042, or ENL 2033, 8 hours; (b) Shakespeare—ENL 4135 or ENL 4136, 4 hours; (c) two "period" courses in two different periods—ENL 4331 or ENL 4341, ENL 4351 or ENL 4352, ENL 4403 or ENL 4404, ENL 4412 or ENL 4415, 8 hours; (d) two courses in American literature, one of which should include contemporary writers, otherwise an additional course in contemporary literature will be required—AML 2020, AML 2021, AML 3113, ENG 3221, ENG 3222, ENG 4745, AML 4210, AML 4301, 8 hours; (e) two courses in Linguistics, including modern English grammar—ENG 3500, ENG 3551, ENG 4511, LIN 4400, 8 hours; (f) a course in advanced composition—ENC 3464, CRW 3230, ENC 3532, ENC 4542, 3 hours. Total 39 hours, including beginning English or the equivalent hours.

In addition, the student must have (a) two Speech courses: one in the fundamentals of Speech—SPC 2300 and a second in, normally, oral interpretation—SPC 2260; (b) six courses in Education, including the internship (a total of 39-40 hours, of which only 24 will be counted toward the Arts and Sciences degree). See the appropriate pages in the College of Education section of this catalog.

Honors. To graduate with Departmental Honors, one must earn satisfactory grades ("A" or "B") in at least two terms of ENG 4936, the Honors Seminar, which may be repeated (total 15 hours). Admission to ENG 4936 requires the recommendation of a departmental adviser. To graduate with High Honors, one must take either ENG 4936 for 10 hours or IDS 4938 for 12 hours, or both. For College and High Honors, see statement under COLLEGE OF ARTS AND SCIENCES: HONORS PROGRAMS.

UNDERGRADUATE COURSES
American Literature

(See also ENGLISH-GENERAL for other courses in American literature.)

AML 2020 Survey of American Literature: From the Beginnings through Whitman. F, W.
Credits: 4
Critical study of masterpieces embodying the main lines of literary tradition in the period indicated.

AML 2021 Survey of American Literature: Twain to World War II. W, S.
Credits: 4
Second part of the course AML 2020-AML 2021.

AML 3113 American Literature Since World War II. S.
Credits: 4
A study of contemporary American literature with attention to its general characteristics and development.

AML 4210 Major Figures of American Literature. F, W, S.
Credits: 4
A variable content course which will cover one major author each quarter. May be repeated once with change of content. Consult department for description of offering.

AML 4301 Themes, Genres, and Movements in American Literature. W.
Credits: 4
A variable content course. May be repeated once with change of content. Consult department for description of offering in quarter given.

Creative Writing

(See also ENGLISH COMPOSITION for other writing courses.)

CRW 2221 Beginning Fiction Writing. F, W, S.
Credits: 3
A beginning course in fiction writing designed to acquaint the student with the craft of writing. Original works of fiction by the students will be read and discussed in class.

CRW 2321 Beginning Poetry Writing. F, W, S.
Credits: 3
A course designed to acquaint the student with the fundamentals of poetry writing by exploring its various forms and techniques and their relationship to the practical problems of meaning. Poetry written by the students will be read and discussed in class.

CRW 3230 Imaginative Writing: Fiction. F, W, S.
Credits: 3
Designed to help the student who desires guidance in developing his capacity for original work. Group discussion, individual conferences, many papers.

CRW 3330 Imaginative Writing: Poetry. F, W, S.
Credits: 3
Guidance in development of original work in poetry. Group discussion, individual conferences.

CRW 3530 Beginning Course in Writing for Younger Readers. F, W, S.
Credits: 3
Student will write original material, selecting from several genres: fiction, poetry, drama, or non-fiction.

CRW 4540 Advanced Writing for Younger Readers. F, W, S.
Credits: 4; Prereq: Permission of the instructor.
Students will write original material, selecting from several genres: fiction, poetry, drama, or non-fiction. Can be repeated for credit.

CRW 4905 Individual Work in Fiction Writing. F, W, S.
Credits: 4; Prereq: Permission of the instructor.
Individual projects in creative composition for qualified students interested in the writing of fiction. Can be repeated for credit.

CRW 4906 Individual Work in Poetry Writing. F, W, S.
Credits: 4; Prereq: Permission of the instructor.
Individual projects in creative composition for qualified students interested in the writing of poetry. Can be repeated for credit.

English Composition

(See also CREATIVE WRITING for other writing courses.)

ENC 1017L Writing Laboratory. F, W, S, 5S.
Credits: 1
Supplemental lab course for students desiring closely supervised work in writing. The course may be repeated.

ENC 1102 Expository Writing. F, W, S, 5S.
Credits: 3
An introduction to the methods of exposition—definition, classification, comparison and contrast, illustration, analysis. EH 111 or its equivalent is required as a prerequisite for all other English courses. Students who earn less than a B grade in EH 111 are advised to take a second composition course.

ENC 1256 Introduction to Film. W, S.
Credits: 4
A viewing and discussion of the different kinds of films: narrative films, documentaries, experimental and personal films. Three papers will be required.

ENC 1418 Argumentative and Persuasive Writing. F, W, S, 5S.
Credits: 3
An introduction to the methods of argument and persuasion. Students who earn less than a B grade in EH 111 are advised to take this course.

ENC 3343 Basic Technical Writing. F, W, S.
Credits: 3; Prereq: Junior standing.
Effective presentation of technical and semitechnical information.

ENC 3351 Business Communications. F, W, S, SS.
Credits: 4; Prereq: Completion of Freshman English.
Intensive instruction and practice in the organization, content, and style of business letters of all kinds.

ENC 3464 Advanced Exposition. F, W, S, SS.
Credits: 3
An advanced composition course in the methods of exposition: the writing of definition, classification, comparison and contrast, analysis, illustration, identification.

ENC 3532 Argumentative Writing. F, W, S.
Credits: 3
A course in advanced composition concerned with the writing of argument and critical analysis.

ENC 4356 Report Writing. F, W, S.
Credits: 4; Prereq: Junior standing.
Instruction and practice in writing reports for practical purposes. Collecting, organizing, and interpreting facts, then writing up findings in report form and style.

ENC 4542 Analysis of Propaganda. S.
Credits: 4
A course in the study of propagandistic techniques. Students are not taught to write propaganda but to produce written assessments of it.

English — General

ENG 1200 Introduction to Fiction. F, W, S, SS.
Credits: 4
The reading of novels and short stories for the purpose of understanding the forms and techniques of fiction. Three papers will be required.

ENG 1400 Introduction to Drama. F, W, S, SS.
Credits: 4
The reading of plays for the purpose of understanding the forms and techniques of drama. Three papers will be required.

ENG 1710 Introduction to Poetry. F, W, S, SS.
Credits: 4
The reading of poems for the purpose of understanding the forms and techniques of poetry. Three papers will be required.

ENG 2120 Understanding Film. F, S.
Credits: 4
A study of the film as an artistic medium. Emphasis will be placed upon film elements, such as camera movement and editing, and their importance to the total artistry of the film. Written assignments will include film reviews and critiques.

ENG 2540 English Grammar. F, W, S.
Credits: 2
A course in the basics of traditional English grammar designed as a complement to our composition and creative writing courses, as a review for those students who will take preprofessional exams, and as a basic course for students interested in improving their knowledge of English.

ENG 2932 English: College Honors. F, W, S.
Credits: 3
Enrollment by invitation. The critical reading of various kinds of literature. The fall quarter concentrates on fiction, the winter quarter on drama, and the spring quarter on poetry. Textual materials are chosen to match the abilities of Honors students. The students are encouraged to show originality, invention, and responsibility in speaking and writing, in leading discussions, in investigating, interpreting, reporting, and defending their findings. This course can be repeated for credit.

ENG 3132 The Movies as Narrative Art. F.
Credits: 4
An examination of the movies as a mode of storytelling, with emphasis upon the difference between verbal and visual narration, and in relation to contemporary thought and values.

ENG 3135 History of the Film, Part I. W.
Credits: 4
History of the film from its beginnings to the introduction of sound.

ENG 3136 History of the Film, Part II. S.
Credits: 4
History of the film from sound to the present.

ENG 3203 The Forms of Fiction. F.
Credits: 4
A close reading and critical analysis of representative forms and styles of fiction, with the major objective of improving the student's ability to read the short story and novel with understanding.

ENG 3221 American Fiction: Beginnings to 1900. W, S.
Credits: 4
Includes works by Cooper, Poe, Hawthorne, Melville, Twain, Howells, and James.

ENG 3222 American Fiction: 1900 to World War II. F, W, S.
Credits: 4
Includes works by Crane, Dreiser, Hemingway, Fitzgerald, Faulkner, and Steinbeck.

ENG 3315 The English Novel: 20th Century. S.
Credits: 4
Includes works by such writers as Conrad, Lawrence, Joyce, Forster, Woolf, Green, and Waugh.

ENG 3321 The English Novel: 18th Century. F.
Credits: 4
Includes works by such writers as Defoe, Richardson, Fielding, Sterne, and Smollett.

ENG 3325 The English Novel: 19th Century. W.
Credits: 4
Includes works by such writers as Scott, Austen, Dickens, Thackeray, Eliot, and Hardy.

ENG 3410 The Forms of Drama. W.
Credits: 4
A close reading and critical study of representative types and styles of drama, with the major objective of improving the student's ability to read the play with understanding.

ENG 3462 Modern Drama: Early. F.
Credits: 3
A study of drama from Ibsen through O'Neill. Representative selections from Continental, British, and American playwrights.

ENG 3463 Modern Drama: Late. W, S.
Credits: 3
A study of drama from Pirandello to the present.

ENG 3500 Introduction to English Linguistics. F, W, S, SS.
Credits: 4
A survey of modern linguistics and the English language, its structure and development.

ENG 3551 Modern English Structure. F, W, S.
Credits: 4
A study of the grammar of current English from the viewpoint of modern linguistics.

ENG 3714 The Forms of Poetry. S.
Credits: 4
A close reading and critical study of representative types and styles of poetry, with the major objective of improving the student's ability to read poems with understanding.

ENG 3812 The Theory and Practice of Modern Criticism. W, S.
Credits: 4
An intensive study of the idea of art as it has evolved in 20th-century literary criticism and of the application of that idea to specific narrative, poetic, and dramatic texts.

ENG 4105 Studies in Literary Genres. F.
Credits: 4
A variable topics course providing a study in depth in a particular literary genre such as the epic, satire, burlesque, etc. Consult department for description of offering in quarter given.

ENG 4141 Film Studies. F, W, S.
Credits: 4
A course of variable content providing an opportunity for the study in depth of film genres, notable film directors, and other significant topics or subjects related to film. May be repeated with a change of topic up to a maximum of 12 credits.

ENG 4161 Children's Literature. F, W, S.
Credits: 4
Designed to arouse a genuine interest in children's books and to aid the student in obtaining a critical knowledge of the literature.

ENG 4165 Literature for the Adolescent. F, W, S.
Credits: 4
A study of the types of literature read by adolescents, with emphasis upon the criteria for the choice of good books and upon developing a familiarity with the many books available.

ENG 4424 Restoration and Eighteenth-Century Drama. S.
Credits: 4
Study of the English theater from 1660 to 1800, including such playwrights as Dryden, Etherege, Wycherley, Congreve, Otway, Rowe, Lillo, Goldsmith, Sheridan.

ENG 4470 World Drama: I. W.
Credits: 4
World drama from its origins down to the rise of realism. First half of the course covers the ancient, medieval, and early renaissance periods.

ENG 4471 World Drama: II. S.
Credits: 4
Second half of the course. Begins with the later renaissance drama and continues through the neoclassic and romantic periods down to pre-Ibsen realists.

ENG 4511 History of the English Language. F, W, S.
Credits: 4
The origins of the English language and its development from prehistoric times to present.

ENG 4745 American Poetry: Nineteenth and Twentieth Century. S.
Credits: 4
Critical study of such major American poets as Emerson, Whitman, Dickinson, Robinson, Frost, Eliot, Stevens.

ENG 4748 Modern English Poetry: Eliot to the Present. F.
Credits: 4
Critical study of such major poets as Eliot, Auden, Thomas, McNeice, Spender, and Lewis.

ENG 4905 Independent Study. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of the instructor and of the department head or his delegate.
For advanced students who desire to supplement the regular courses by independent reading or research under guidance. May be repeated with change of topic up to a maximum of 12 credits.

ENG 4936 Honors Seminar. F, W, S.
Credits: 5; Prereq: Recommendation by a departmental adviser.
Open to selected English majors. Intensive study by the seminar method of a limited topic in English and American literature. To obtain Department Honors (and possibly High Honors) ENG 4936 should be taken at least twice during

one's junior and senior years. May be repeated (maximum of 15 hours).

ENGLISH LITERATURE

(See also ENGLISH-GENERAL for other courses in English Literature.)

ENL 2031 Survey of English Literature: Medieval and Renaissance. F, S.
Credits: 4
Critical study of such representative authors as Chaucer, Spenser, Shakespeare, and Donne, with some emphasis given to the literary history of the period.

ENL 2033 Literature Quarter One: English Literature 1380-1880. F.
Credits: 8
An eight-hour course led by three instructors. The reading list consists primarily of complete works of English literature written between 1380 and 1880 chosen to provide an indication of the range and excellence of English literature and to suggest the development of English style. May be used to satisfy the major requirement of an English literature course before 1800.

ENL 2034 Survey of English Literature: Restoration through the Romantic Period. F, W.
Credits: 4
Critical study of such representative authors as Milton, Pope, Johnson, Wordsworth, and Byron, with some emphasis given to the literary history of the period.

ENL 2042 Survey of English Literature: Victorian to the Present. W, S.
Credits: 4
Critical study of such representative authors as Tennyson, Browning, Hopkins, Yeats, Lawrence, and Joyce, with some emphasis given to the literary history of the period.

ENL 2130 Introduction to Shakespeare. F, S.
Credits: 4
A course designed to introduce students to the pleasure and wisdom of Shakespeare's plays. Various approaches will be used: movie versions of the plays, staging of scenes from the plays, and discussion.

ENL 3451 British Literature Since World War II. W.
Credits: 4
A study of contemporary British literature with attention to its general characteristics and development.

ENL 4111 Chaucer. F.
Credits: 4
Reading and critical study of Chaucer's poetry. Emphasis will be on the *Canterbury Tales* or *Troilus and Criseyde* at the option of the instructor.

ENL 4135 Shakespeare: Early Plays. F, W, S.
Credits: 4
A study of selected plays from Shakespeare's early period, such as *A Midsummer Night's Dream, Twelfth Night, Richard II, Henry IV,* Romeo and *Juliet.*

ENL 4136 Shakespeare: Late Plays. F, W, S.
Credits: 4
A study of selected plays from Shakespeare's late period, such as *Hamlet, King Lear, Measure for Measure. The Winter's Tale, The Tempest.*

ENL 4300 Old English Literature. S.
Credits: 4
A survey of representative works of the Old English period in translation: *Beowulf, Wanderer, Seafarer,* and poetry of the Biblical and popular traditions.

ENL 4311 Medieval English Literature. W.
Credits: 4
A survey of representative works of the Middle English period such as *Sir Gawain and the Green Knight, Pearl,* Malory's *Morte D'Arthur,* and selections from medieval drama and lyric poetry.

ENL 4321 Renaissance Studies. S.
Credits: 4
A variable content course in different aspects of the Renaissance, such as the major drama from the time of Marlowe to the closing of the theaters in 1642.

ENL 4331 Renaissance Literature: 16th Century. F.
Credits: 4
Variable topics, 1485-1603, such as Spenser, the rise of English prose, the development of English verse, the age of sonnets, Elizabethan fiction. Consult department for description of offering.

ENL 4341 Renaissance Literature: 17th Century. W.
Credits: 4
Variable topics, 1603-1700, such as Milton, the revolution in English prose styles, sacred and secular lyrics, the literature of paradox. Consult department for description of offering.

ENL 4351 The Age of Dryden and Pope. W.
Credits: 4
Selections from the best works of such writers as Dryden, Congreve, Addison, Swift, and Pope.

ENL 4352 The Age of Johnson. S.
Credits: 4
A study of the best works from Johnson, his circle, the novelists, and the lyric poets.

ENL 4403 The Romantic Period: Early. F, W.
Credits: 4
Selections from the best works of such writers as Burns, Blake, Wordsworth, Coleridge, Scott, and Lamb.

ENL 4404 The Romantic Period: Late. W, S.
Credits: 4
Selections from the best works of such writers as Byron, Shelley, and Keats.

ENL 4412 Victorian Literature. F, S.
Credits: 4
Selections from such writers as Tennyson, Browning, Arnold.

ENL 4415 Ideas and Themes in Victorian Literature. W.
Credits: 4
Selections from such writers as Carlyle, Newman, Mill, Ruskin, Arnold. Consult department for description of offering in the quarter given.

English as a Second Language

ESL 2422 English Language and Writing for Foreign Students. F, W, S.
Credits: 2 to 5
A study of language principles with emphasis on their influence on writing in English. May be repeated for a maximum of 15 hours. Does not satisfy general education requirements in English.

Language Arts and English Education

LAE 4235 English in the Secondary School. F, W, S.
Credits: 4
Designed to help prepare teachers by a study of the content, materials, methods, and objectives of the secondary English program.

LAE 4414 Literature for Young Children. F, W, S.
Credits: 4
An exploration of kinds and qualities of literature for the younger child, examining the child's first experience with literature in oral forms, then moving on to picture and story books and poetry.

Linguistics

(See also ENGLISH-GENERAL for other Linguistics courses.)

LIN 4400 Applied Linguistics. W.
Credits: 4
The application of linguistics to the study of English; a comparison of modern approaches to the study of grammar. With a change in content, may be repeated for credit.

Library Science

LIS 2001 Use of Books and Libraries. F, W, S.
Credits: 2
Detailed study of the basic and most useful reference books and bibliographic aids. Practice problems in the use of specific titles and in how to find materials in the library. Does not satisfy general education requirements in English.

LIS 2100 History of Books, Printing, and Libraries. W.
Credits: 3
The book, the invention of printing, and the place of libraries in the development of western culture.

Literatures

(See also AMERICAN LITERATURE, ENGLISH-GENERAL, ENGLISH LITERATURE, LANGUAGE ARTS, and ENGLISH EDUCATION for other literature courses.)

LIT 2160 Contemporary Reading. W, S.
Credits: 3
The study of selected contemporary writers. Reading lists will vary with individual sections.

LIT 2212 Survey of World Literature: Ancient. F, S.
Credits: 3
The first quarter of a course which examines the panorama of world literature, particularly as that literature has influenced British and American writers.

LIT 2214 Survey of World Literature: Medieval and Renaissance. F. W.
Credits: 3
Second quarter of the sequence LIT 2212, LIT 2214, LIT 2223.

LIT 2223 Survey of World Literature: Modern. F, W, S.
Credits: 3
Third quarter of the sequence LIT 2212, LIT 2214, LIT 2223. From the end of the seventeenth century to the present.

LIT 2930 Special Topics. F, W, S.
Credits: 4
In these courses each instructor will choose a topic in which he has a special competence and interest. Examples of topics used are utopian literature, the short story, the vampire theme. The topics will be announced by the department when offered.

LIT 3162 Metaphysics of Modern Literature. S.
Credits: 4
A critical reading of distinctive works of modern literature with the intent of discovering the world-view they embody. Readings from novels, short stories, and plays.

LIT 3311 The Bible as Literature. S.
Credits: 4
A literary analysis of selections from the Old and New Testaments, with emphasis upon the poetry and narrative elements.

LIT 3321 Ethnic Literature. F, S.
Credits: 4
A study of selected literature representative of various ethnic groups in the United States, e.g., American Indian, Negro, Jewish, Spanish American.

LIT 3342 Afro-American Literature. F, W.
Credits: 4
A study of literature—prose, fiction, drama, poetry, essays—by representative black American authors, with emphasis on the twentieth century.

LIT 3363 Jewish Literature. S.
Credits: 4
A variable content course in aspects of the Jewish literary experience, from the biblical narrative and Talmudic tales to Yiddish literature and the American Jewish novel.

LIT 3411 Women in Literature. F, S.
Credits: 4
A critical and thematic study of women in literature. A variable content course which may include fiction, poetry, or drama; English, American, or World Literature.

LIT 3443 Modern Science Fiction. F, W, S.
Credits: 4
An interdisciplinary approach to contemporary trends in science fiction. Writers such as Orwell, Herbert, Delaney, Vonnegut, and Miller are studied.

LIT 4131 Studies in Modern Literature. S.
Credits: 4
A variable topics course providing a study in depth of an author or a topic such as myth, symbolism, romanticism, or expressionism in modern literature. Consult department for description of offering.

LIT 4218 Great Books of the Western World: I. W.
Credits: 4
Many of the great classics are read, analyzed and discussed. This is a two course sequence. In the first course the works of classical, medieval, and renaissance writers are read.

LIT 4219 Great Books of the Western World: II. S.
Credits: 4
Second half of the course. Works of writers from the 18th century to the present are read.

LIT 4228 Studies in World Literature. W.
Credits: 4
A variable content course embracing topics such as the lyric, the prose epic, symbolist poetry, the impressionist novel, etc. Will include works from various countries studied in their historical and cultural context.

LIT 4282 Introduction to Folklore. F, S.
Credits: 4
Reading, discussion, and critical study of the types of folklore, with emphasis on folksong. Some attention to utilization by teachers and creative artists.

LIT 4284 The Folktale. W.
Credits: 4
Reading folktales, a study of their types and characteristics, some attention to critical and scholarly study, and utilization of folktales by teachers and creative artists.

LIT 4371 Anglo-Irish Literature. W.
Credits: 4
Survey of the Irish Renaissance. Selections from Mangan, Moore, "A.E.", Wilde, Shaw, Yeats, Lady Gregory, Synge, Joyce, Stephens, O'Casey, Flann O'Brian.

LIT 4930 Variable Topics in Literature and Language. F, W, S.
Credits: 2 to 5
Proseminar of variable content providing an opportunity for the study in depth of various topics or subjects such as the literature of war and peace, of death, of courtly love. May be repeated with change of content up to a maximum of 10 credits.

Speech Communication
(See also ENGLISH COMPOSITION for other composition courses. See ENGLISH-GENERAL for other courses in critical analysis and theory of criticism.)

SPC 3605 Speechwriting. F, W, S.
Credits: 4
Consideration of and practice with word choice and word arrangement as sources of style that influence memorability, credibility, and ease and accuracy of comprehension.

SPC 3680 Rhetorical Criticism. S.
Credits: 4
Critical analyses of rhetorical elements and processes in both oratorical and nonoratorical forms.

SPC 4631 Language and Image in Political Communication. W.
Credits: 4
A study of symbolic sources of rhetorical effectiveness as employed in various genres of communication in political contexts.

GRADUATE COURSES

Courses offered through the Program in Linguistics with the prefix LIN may also be used as part of a graduate program in English.

American Literature

AML 6341 Studies in American Literature Before 1900.
Credits: 4

AML 6342 Studies in 20th Century American Literature.
Credits: 4

AML 7191 Seminar in American Literature Before 1900.
Credits: 4

AML 7192 Seminar in 20th Century American Literature.
Credits: 4

Creative Writing

CRW 6250 Fiction Writing.
Credits: 4

CRW 6350 Verse Writing.
Credits: 4

CRW 6550 The Writing of Children's Literature.
Credits: 4

English-General

ENG 5905 Special Study in English.
Credits: 1 to 5

ENG 6063 Bibliography and Methods of Research.
Credits: 4

ENG 6143 The Language of Film.
Credits: 4

ENG 6144 Studies in the Movies.
Credits: 4

ENG 6148 Studies in Shakespeare.
Credits: 4

ENG 6154 Communications and Popular Culture.
Credits: 4

ENG 6217 Studies in Fiction.
Credits: 4

ENG 6437 Studies in Drama.
Credits: 4

ENG 6595 Studies in English Linguistics.
Credits: 4

ENG 6718 Stylistics.
Credits: 4

ENG 6755 Studies in Verse.
Credits: 4

ENG 6839 Studies in Literary Criticism.
Credits: 4

ENG 6905 Individual Work.
Credits: 1 to 4

ENG 6910 Supervised Research.
Credits: 1 to 15††

ENG 6971 Master's Research.
Credits: 1 to 15††

ENG 7066 Seminar in Bibliography.
Credits: 4

ENG 7119 Seminar in Genres.
Credits: 4

ENG 7147 Seminar in the Movies.
Credits: 4

ENG 7938 Seminar in Variable Topics.
Credits: 1 to 5

ENG 7980 Doctoral Research.
Credits: 1 to 15††

English Literature

ENL 6304 Studies in Old English.
Credits: 4

ENL 6314 Studies in Middle English.
Credits: 4

ENL 6323 Studies in Renaissance Literature.
Credits: 4

ENL 6394 Studies in Restoration and 18th Century Literature.
Credits: 4

ENL 6425 Studies in 19th Century British Literature.
Credits: 4

ENL 6447 Studies in 20th Century British Literature.
Credits: 4

ENL 7149 Seminar in Shakespeare.
Credits: 4

ENL 7317 Seminar in Medieval Literature.
Credits: 4

ENL 7326 Seminar in Renaissance Literature.
Credits: 4

ENL 7393 Seminar in Restoration and 18th Century Literature.
Credits: 4

ENL 7427 Seminar in 19th Century British Literature.
Credits: 4

ENL 7448 Seminar in 20th Century British Literature.
Credits: 4

Language Arts and English Education

LAE 6379 Teaching of Business and Technical Writing.
Credits: 4

††Grading is on a S-U basis only.

LAE 6940 Supervised Teaching.
Credits: 1 to 5††

LAE 6947 Practicum in the Teaching of College English.
Credits: 4

Linguistics

LIN 6417 Linguistics in the Community College.
Credits: 4

LIN 7938 Seminar in Linguistics.
Credits: 4

Literatures

LIT 6283 Studies in Folklore.
Credits: 4

LIT 6373 Studies in Irish Literature.
Credits: 4

LIT 6934 Variable Topics.
Credits: 1 to 5

LIT 7289 Seminar in Folklore.
Credits: 4

Reading Education

RED 6380 Principles of Community College and Adult Reading Instruction.
Credits: 4

RED 6480 Laboratory in Community College and Adult Reading Instruction.
Credits: 4

Speech Communication

SPC 6239 Studies in Rhetorical Theory.
Credits: 4

ENTOMOLOGY AND NEMATOLOGY

INSTRUCTIONAL STAFF 1977-78

Maxwell, F.G., Chairman; Allen, G.E.; Anthony, D.W.; Ball, J.C.; Baranowski; R.M.; Barfield, C.S.; Berner, L.; Brogdon, J.E.; Brooks, R.F.; Burditt, A.K.; Buren, W.F.; Butler, J.F.; Callahan, P.S.; Carlson, D.A.; Chambers, D.L.; Cromroy, H.L.; Dickson, D.W.; Dunn, R.A.; Fairchild, A.G.B.; Ferkovich, S.M.; Foltz, J.L.; Greany, P.D.; Habeck, D.H.; Hall, D.W.; Herzog, D.C.; Johnson, F.A.; Kerr, S.H.; Koehler, P.G.; LaBrecque, G.C.; Lloyd, J.E.; Lofgren, C.S.; Lowe, R.E.; Matheny, E.L., Jr.; McCoy, C.W., Jr.; McLaughlin, J.R.; Minnick, D.R.; Mitchell, E.R.; Morgan, P.B.; Musgrave, C.A.; Nation, J.L.; Oberlander, H.; Overman, A.; Patterson, R.S.; Perry, V.G.; Poe, S.L.; Reinert, J.A.; Rhoades, H.L.; Rich, J.R.; Roberts, R.H.; Robinson, F.A.; Seawright, J.A.; Sharp, J.L.; Short, D.E.; Shilhacek, D.L.; Smart, G.C., Jr.; Smittle, B.J.; Stokes, D.; Tarjan, A.C.; Tsai, J.H.; Tumlinson, J.H., III; Vick, K.W.; Waddill, V.H.; Waites, R.E.; Walker, T.J.; Weems, H.V., Jr.; Weidhaas, D.E.; Westfall, M.J.; Whitcomb, W.H.; Wilkinson, R.C., Jr.; Wiseman, B.R.; Woodruff, R.E.; Workman, R.B.

ENY 3003 Insect Natural History. W, SS.
Credits: 3
Primarily concerned with insects in their natural environment. This course is designed for non-science majors.

ENY 3004 General Entomology. W.
Credits: 4; Prereq: BSC 2010, BSC 2011 or equivalent.
General insect biology with an evolutionary perspective. The 10 labs are devoted almost exclusively to learning major Orders by sight, and the identification of Families with the "Peterson" field guide. Discussion, visual aids, field trips.

ENY 3005 Principles of Entomology. F, W, S, SS.
Credits: 3; Required Coreq: ENY 3006 or one of the 35 series. Laboratory Course.
An introduction to Entomology including structure, development, classification and habits. Various approaches to insect control are explored.

ENY 3006 Principles of Entomology Laboratory. F, W, S, SS.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory study of insect structure, classification, behavior and control.

ENY 3511 Fruit Insects. SS.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory oriented study of the identification, injury, life history and control of citrus and other fruit and nut insect pests.

ENY 3513 Vegetable Insects. S.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory oriented study of the identification, injury, life histories and control of the important pests of Florida vegetable crops.

ENY 3515 Ornamental and Turf Insects. F.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory oriented study of the identification, injury, life histories and control of the important pests of ornamental plants and turf.

ENY 3521 Field Crop Insects. S.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory oriented study of the identification, injury, life history and control of important Florida field crop insect pests.

ENY 3531 Animal Insects. F.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory oriented study of the identification, importance, life histories and control of the important insect pests of domesticated animals.

ENY 3541 Forest Insects. S.
Credits: 3
The Identification, injury, life history and control of important forest and shade tree insect pests.

ENY 3551 Household Insects. W, SS.
Credits: 2; Prereq. or Coreq: ENY 3005.
A laboratory oriented study of the major insect pests encountered in households and structures including their life histories and control.

ENY 3701 Principles of Nematology. F, SS.
Credits: 4; Prereq: ZOO 2013.
An introduction to Nematology including studies of morphology, life histories, and control of the major nematode parasites of plants. Also, studies of the bionomics of certain soil nematodes and nematode parasites of vertebrates and arthropods.

ENY 3931 Undergraduate Seminar. S.
Credits: 1††
Preparation and presentation of papers on approved subject in Entomology and Nematology. May be repeated to a maximum of 3 credits.

ENY 4161 Insect Identification. W, S.
Credits: 5; Prereq: ENY 3004, ENY 3005, or equivalent.
Identification of immature and adult insects of all major families.

ENY 4201 Insect Ecology, Behavior, and Systematics. F, S.
Credits: 5; Prereq: ENY 3004, ENY 3005, or permission of instructor.
The environmental relations of insects with an evolutionary perspective; basic concepts in evolutionary ecology, population genetics, behavior, and systematic entomology, including the essentials of taxonomy and nomenclature, collecting, and museum technique.

ENY 4221 Principles of Insect Control. W.
Credits: 5; Prereq: ENY 3005.
Designed for all students in agriculture. Descriptions, uses, and limitations of strategies and tools for insect control. Insecticides, growth regulators, chemicals affecting behavior, sterilization, biological control, physical control, cultural control; the pest management concept.

ENY 4353 Insect Physiology and Morphology. F, W.
Credits: 5; Prereq: ENY 3004, ENY 3005, BCH 3023 or equivalent.
The external and internal morphology of insects and the physiology of cells, tissues, organs and systems.

ENY 4571 Apiculture. S.
Credits: 3; Prereq: ENY 3004, ENY 3005 or permission of the instructor.
The organization of a bee colony, life processes, races of bees, manipulation, value of colonies, nectar and pollen sources, pollination value, diseases, selection of apiary sites, economic importance of the industry, equipment and marketing of products.

ENY 4660 Medical & Veterinary Entomology. F.
Credits: 4; Prereq: ENY 3004 or ENY 3005 or permission of instructor.
Arthropods parasitic upon man and animals, their bionomics, classification, distribution, disease relationship, structure, and control of arthropods affecting man and domestic animals. Also recommended for students in Environmental Engineering, Parasitology and Medicine.

ENY 4905 Problems in Entomology. F, W, S, SS.
Credits: 1 to 5; Prereq: ENY 3004 or ENY 3005 and the basic course in selected field of specialization.
Problems in any field of specialization in Entomology and Nematology. May be repeated for a total of 5 credits.

ENY 4949 Full Time Practical Work Experience in Entomology and Nematology. F, W, S, SS.
Credits: 1 to 4; S-U Grade only. Prereq: Prior arrangement with adviser and approval of Department Chairman and Dean.
Practical work must be a new experience and related to the field of study.

GRADUATE COURSES

ENY 5561 Tropical Entomology. F.
Credits: 4

ENY 5781 Tropical Plant Nematology. F.
Credits: 5

ENY 6151 Insect Systematics. W.
Credits: 5

ENY 6203 Insect Ecology. S.
Credits: 5

ENY 6241 Biological Control of Insects. F, S.
Credits: 5

ENY 6261 Insect Resistance to Crop Plants 1. W.
Credits: 4

ENY 6262 Insect Resistance to Crop Plants 2. W.
Credits: 3

ENY 6321 Comparative Anatomy of the Hexapoda. F.
Credits: 5

ENY 6401 Insect Physiology. F.
Credits: 5

ENY 6451 Insect Behavior. W.
Credits: 5

ENY 6502 Aquatice Insects. SS.
Credits: 5

††Grading is on a S-U basis only.

ENY 6581 Acarology. S.
Credits: 5

ENY 6591 Mosquitoes. S.
Credits: 5

ENY 6601 Growth and Development in Insects. W.
Credits: 4

ENY 6611 Immature Insects. F.
Credits: 5

ENY 6651 Insect Toxicology. W.
Credits: 5

ENY 6661 Medical Entomology. SS.
Credits: 5

ENY 6663 Veterinary Entomology. F.
Credits: 5

ENY 6711 Taxonomy of Nematodes. S.
Credits: 5

ENY 6723C Advanced Plant Nematology. W.
Credits: 5

ENY 6731 Morphology and Physiology of Nematodes. W.
Credits: 5

ENY 6780 Marine Nematodes. S.
Credits: 3

ENY 6801 Radiation in Insect Studies. W.
Credits: 5

ENY 6810 Information Techniques in Entomology. F.
Credits: 1

ENY 6821 Insect Pathology. SS.
Credits: 5

ENY 6822 Microbial Control of Insects. SS.
Credits: 5

ENY 6905 Problems in Entomology and Nematology. F, W, S, SS.
Credits: 1 to 6

ENY 6910 Supervised Research. F, W, S, SS.
Credits: 1 to 5††

ENY 6932 Special Topics in Entomology and Nematology. F, W, S, SS.
Credits: 1 to 2††

ENY 6940 Supervised Teaching. F, W, S, SS.
Credits: 1 to 5††

ENY 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15††

ENY 6986 Research Techniques in Entomology. W.
Credits: 5

ENY 7980 Doctoral Research. F, W, S, SS.
Credits: 1 to 15††

ENVIRONMENTAL ENGINEERING SCIENCES

College of Engineering

INSTRUCTIONAL STAFF 1977-78

Pyatt, E.E., Chairman; Bayley, S.E.; Bevis, H.A. Bitton, G.; Bolch, W.E., Jr.; Brezonik, P.L.; Crisman, T.L.; Dunavant, B.G.; Fox, J.L.; Furman, T. deS.; Heaney, J.P.; Huber, W.C.; Kylstra, C.D.; Lundgren, D.A.; March, A.W.; Morgan, W.H.; Odum, H.T.; Roessler, C.E.; Singley, J.E.; Urone, P.; Zoltek, J., Jr.

Engineering: Environmental

ENV 3003 Environmental Quality and Man. F, S, S, SS.
Credits: 4
Interaction of technological and industrial man with earth's resources and the resultant effect on environmental quality. Identification of air, water, and land pollution causes, effects, and controls. Concepts of environmental management and the socio-economic and institutional factors influencing environmental quality. Intended for non-ENV majors.

ENV 3930 Undergraduate Seminar. F, S.
Credits: 1††
Intended for undergraduate students majoring in Environmental Engineering Sciences. Talks, lectures, and discussions on selected topics in Environmental Engineering Sciences. May be repeated with change in content up to a maximum of 3 credits.

ENV 4021 Basic Concepts of Water and Wastewater Treatment. F, S.
Credits: 4; Prereq: ENV 4514 and EES 4241 or consent of instructor.
An introduction to the basic physical, chemical and biological concepts involved in the treatment of water and wastewater.

ENV 4104 Elements of Atmospheric Pollution. F, S.
Credits: 4
The air pollution problem, causes, sources, effects. Historical development. Physical, political and economic factors in its control.

ENV 4201 Introduction to Radiological Health. F, S.
Credits: 4
A beginning course covering radiation sources, effects and protection guides. Radiation exposure and protection in medical, occupational and natural environments.

ENV 4241 Fundamentals of Radiation Protection. S.
Credits: 4; Prereq: ENU 4605 or equivalent or consent of instructor.
Radiation sources, uses, and effects on humans; examination of radiation protection literature and philosophy; practical radiation protection methods and techniques; review of radiation exposure standards, regulations, legislation.

ENV 4351 Solid Waste Management. W, SS.
Credits: 3
Generation of solid wastes. Collection methods, equipment and costs. Disposal methods, costs and methods of financing.

ENV 4905 Individual Studies in Environmental Engineering Sciences. F, W, S, SS.
Credits: 1 to 5; Prereq: Consent of instructor.
Selected problems or projects in the student's major field of study. May be repeated with change in content up to a maximum of 12 credits.

ENV 4932 Special Problems in Environmental Engineering Sciences. F, W, S, SS.
Credits: 1 to 5
May be repeated with change in content up to a maximum of 12 credits.

ENV 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: 4EG classification.
One term industrial employment including extra work according to a pre-approved outline. Practical engineering work under industrial supervisor, as set forth in the College of Engineering Regulations.

GRADUATE COURSES

ENV 5005 Environmental Health.
Credits: 4

ENV 5126 Introduction to Air Pollution.
Credits: 4

ENV 5206 Survey of Radiological Health.
Credits: 4

ENV 5306 Municipal Refuse Disposal.
Credits: 3

ENV 5517 Treatment of Wastewater.
Credits: 4

ENV 5930 Special Topics in Environmental Engineering I.
Credits: 1 to 5; Maximum of 12 credits.

ENV 6006 Graduate Environmental Engineering Seminar.
Credits: 1 to 2††

ENV 6115 Air Pollution Control Design.
Credits: 4

ENV 6116 Air Pollution Sampling and Analysis.
Credits: 4

ENV 6117 Environmental Meteorology.
Credits: 4

ENV 6118 Atmospheric Dispersion Modeling.
Credits: 4

ENV 6130 Aerosol Mechanics.
Credits: 4

ENV 6211 Health Physics.
Credits: 4

ENV 6216 Radioactive Wastes.
Credits: 4

ENV 6236 Radiological Techniques.
Credits: 5

ENV 6286 Electronic Product Radiation.
Credits: 4

ENV 6409 Advanced Water Treatment.
Credits: 5

ENV 6437 Advanced Environmental Engineering Design 1.
Credits: 5

ENV 6438 Advanced Environmental Engineering Design 2.
Credits: 5

ENV 6516 Advanced Waste Treatment Operations.
Credits: 4

ENV 6606 Environmental Resource Systems.
Credits: 4

ENV 6656 Urban Environmental Problems.
Credits: 4

ENV 6666 Water Quality Management.
Credits: 4

ENV 6905 Individual Work.
Credits: 1 to 5; Maximum of 12 credits.

ENV 6910 Supervised Research.
Credits: 1 to 5††

ENV 6916 Non-Thesis Project.
Credits: 1 to 3; Maximum of 3 credits.

ENV 6932 Special Problems in Environmental Engineering.
Credits: 1 to 5; Maximum of 12 credits.

ENV 6940 Supervised Teaching.
Credits: 1 to 5††

ENV 6971 Master's Research.
Credits: 1 to 15††

ENV 7980 Doctoral Research.
Credits: 1 to 15††

††Grading is on a S-U basis only.

Environmental Engineering Science

EES 2001 Concepts of Environmental Engineering Sciences. F, S.
Credits: 2
Discussions of current environmental problems and their solutions. Intended as an orientation course for future ENV majors.

EES 3008 Energy and Environment. W.
Credits: 4
Consideration of the energy basis for man and nature including principles of energy analysis, systems ecology, and public policy.

EES 4004 Environmental Engineering Sciences. F, S.
Credits: 4; Prereq: 4EG standing in the Department of Environmental Engineering Sciences or consent of instructor.
The application of engineering and scientific principles to the management of the environment as a closed system. Case studies of water, air and land pollution. Economic and ecological consideration.

EES 4101 Environmental Microbiology. F, S.
Credits: 4
General concepts of microbiology with emphasis on the role of microorganisms in the polluted environment and in pollution technology.

EES 4201 The Chemistry of Water Treatment. W.
Credits: 5; Prereq: CHM 2047C or CHM 2043C or consent of instructor.
A theoretical and practical study of the examination and treatment of water.

EES 4241 Introduction to Water Analysis. F, S.
Credits: 4; Prereq: Three quarters of general chemistry.
Basic procedures of chemical analysis applied to natural and wastewaters, including sampling and interpretation of water quality.

EES 4401 Public Health Engineering. W, SS.
Credits: 4
Application of engineering principles to protect public health. Areas covered include: water supply, waste treatment, air pollution, radiological health, occupational health, milk and food sanitation, vector control, solid wastes, and housing hygiene.

GRADUATE COURSES

EES 5007 Ecological and General Systems.
Credits: 4

EES 5105 Environmental Biology.
Credits: 4

EES 5245 Water and Wastewater Analysis.
Credits: 4

EES 5306 Ecological Engineering Seminar.
Credits: 2

EES 6006 Health Hazards of Man's Environment.
Credits: 4

EES 6036 Environmental Instrumentation.
Credits: 5

EES 6106 Environmental Microbiology.
Credits: 4

EES 6136 Biology of Aquatic Systems.
Credits: 4

EES 6166 Aquatic Microbiology.
Credits: 4

EES 6207 Environmental Chemistry.
Credits: 4

EES 6208 Principles of Water Chemistry I.
Credits: 3

EES 6209 Principles of Water Chemistry II.
Credits: 3

EES 6246 Advanced Water Analysis.
Credits: 4

EES 6355 Pollution Transport Systems.
Credits: 4

EES 6356 Estuarine Systems.
Credits: 4

EES 6506 Occupational Health.
Credits: 4

EES 6936 Water Science Seminar.
Credits: 1 to 5; Maximum of 9 credits.

FINANCE AND INSURANCE

College of Business Administration

INSTRUCTIONAL STAFF 1977-78

Heggestad, A.A., Chairman; Arditti, F.D.; Barry, C.B.; Bosshardt, D.I.; Brigham, E.F.; Crum, R.L.; Cushinsky, H.M.; Howard, W.M.; McCollough, W.A.; Manaster, S.; Matthews, C.A.; Nye, D.J.; Pettway, R.H.; Radcliffe, R.C.; Richardson, J.G.; Taylor, D.G.

Finance

FIN 3105 Investments for Individuals. F, S.
Credits: 4
Designed for the non-Business Administration student, this course deals with the principal investment problems the individual faces. Cannot be used for credit for BSBA degree.

FIN 3233 Monetary Economics. F, W, S.
Credits: 4; Prereq: ECO 4205 or ECO 3251. 4205 or ECO 3251.
Analysis of monetary systems and the relationships between money, prices, production, and employment. Factors determining the money supply, with emphasis on the role of commercial and central banks, and money demand.

FIN 3303 Financial Institutions. W.
Credits: 4
A study of the operation of financial institutions, interrelationship between the institutions and their roles in the economic process. Cannot be used for credit for BSBA degree.

FIN 3403 Business Finance. F, W, S, SS.
Credits: 4; Prereq: ACC 2001, ACC 2301 or ACC 2401.
The acquisition and management of funds by business.

FIN 4244 Money and Capital Markets. F, W, S, SS.
Credits: 4; Prereq: ECO 3251.
Financial markets; their role in the macroeconomic framework; the flow of funds and the determinants of their market price; the nature of the different markets and their role in the firm's financial decisions.

FIN 4313 Financial Management of Financial Institutions. F, S, SS.
Credits: 4; Prereq: FIN 4244.
A study of managerial finance in the setting of a financial institution. The unique problems of the several types of institutions as defined by regulation and practice.

FIN 4414 Business Finance Topics. F, W, S, SS.
Credits: 4; Prereq: FIN 3403.
Examination of some major areas of Business Finance such as capital budgeting and cost of capital and a consideration of new topics such as mergers, failures and reorganization.

FIN 4424 Applied Business Finance. F, S, SS.
Credits: 4; Prereq: FIN 4414, or consent of the instructor.
A study of certain business finance problems. The case method will be used. Students will prepare written solutions to case problems and present oral/visual solutions in class.

FIN 4504 Investments. F, W, S, SS.
Credits: 4; Prereq: FIN 3403.
Nature of investments; investment policies; analysis of securities; the mechanics and mathematics of security purchases; factors influencing security prices, and the nature of the New York Stock Exchange.

FIN 4514 Investment Analysis. W, S, SS.
Credits: 4; Prereq: FIN 4504.
The analysis of public utility, railroad, and general corporate securities; the supervision of the security industry; factors influencing security values.

FIN 4604 International Finance. S.
Credits: 4; Prereq: FIN 3403, FIN 4244.
A study of financial problems encountered by firms operating in the international environment.

FIN 4934 Special Topics. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of department.
Course of variable content providing an opportunity for study in depth of topics not offered in other courses and of topics of special current significance. May be repeated with a change in content up to a maximum of 10 credits.

GRADUATE COURSES

For Admission to graduate courses, the student must have been admitted to the Graduate School and normally should have had undergraduate courses in fields pertinent to the graduate courses selected; or where necessary, special arrangements may be made with the approval of the Department chairman.

Though no graduate major may be completed without adequate course work on the 6000 or higher level, certain undergraduate courses in finance and insurance are available for graduate credit as part of a candidate's major. These are FIN 4135 Group Insurance and FIN 4805 Estates, Trusts and Insurance.

FIN 5354 Financial Markets and Institutions.
Credits: 4; Prereq: Intermediate Macroeconomics or consent of the instructor.

FIN 5405 Business Financial Management.
Credits: 4

FIN 5425 Corporation Finance.
Credits: 4; Prereq: FIN 4414 or consent of the instructor.

FIN 5525 Security Markets and Pricing.
Credits: 4; Prereq: FIN 5405 or consent of the instructor.

FIN 6246 Money and Capital Markets.
Credits: 5

FIN 6446 Problems in Corporation Finance.
Credits: 5

FIN 6456 Quantitative Analysis of Financial Decisions.
Credits: 5

FIN 6626 International Finance: Monetary Systems.
Credits: 5

FIN 6816 Seminar in Investments.
Credits: 5

FIN 6826 Problems in Commercial Banking.
Credits: 5

FIN 6905 Individual Work in Finance.
Credits: 1 to 5

FIN 6940 Supervised Teaching.
Credits: 1 to 5††

FIN 6971 Master's Research.
Credits: 1 to 15††

FIN 7808 Theory of Finance I.
Credits: 5

FIN 7809 Theory of Finance II.
Credits: 5

FIN 7938 Finance Research Workshop.
Credits: 4

FIN 7980 Doctoral Research.
Credits: 1 to 15††

Risk Management & Insurance

RMI 3015 Risk and Insurance. F, W, S, SS.
Credits: 4
Identification of various types of risk; principles underlying selection of appropriate means of handling risks; analysis of insurance as a principle means; organization and operation of insurance companies.

RMI 3105 Life Insurance. F.
Credits: 4; Prereq: RMI 3015.
Use of insurance to protect against economic loss caused by termination of earning capacity: benefits, underwriting, ratemaking and legal doctrines.

RMI 3206 Property and Liability Insurance 1. F.
Credits: 5; Prereq: RMI 3015.
The institution of property and liability insurance and its role in the economy. Emphasis is on the determinants of the supply of insurance and types of insurance available. A detailed study of the major types of contracts is accomplished with current problems and issues discussed.

RMI 3207 Property and Liability Insurance 2. W.
Credits: 5; Prereq: RMI 3015.
A study of the functional aspects of insurance companies and the organization and performance of the industry. Topics include marketing, underwriting, ratemaking, and accounting functions. Regulation, pricing, industry structure, and other public policy issues are emphasized.

RMI 3215 Property Insurance.
Credits: 4; Offered by correspondence only.
A continuation of RMI 3217 dealing with casualty insurance, bonds, and agency managements.

RMI 3217 Property Insurance—Fire and Marine Insurance.
Credits: 4; Offered by correspondence only.
The broad, basic principles underlying Fire and Marine Insurance.

RMI 4120 Health Insurance S.
Credits: 4
Public and private mechanisms for meeting financial risks of sickness and injury.

RMI 4135 Group Insurance and Pension Plans. S.
Credits: 4; Prereq: RMI 3015 or RMI 3105.
Group life and health insurance; pension and profit sharing plans.

RMI 4305 Risk Management. S.
Credits: 5; Prereq: RMI 3015 or consent of instructor.
A course in applied risk theory. Topics include estimation of risk, determination of methods of handling risk, optimal levels of self insurance and deductibles, and estimation of necessary amounts of reserves.

RMI 4506 Social Insurance. W.
Credits: 4
Government insurance programs designed to alleviate problems created by old age, poor health, and unemployment: structure, relationships with private programs, and proposals for expanding.

RMI 4805 Estates, Trusts and Insurance. W.
Credits: 4; Prereq: RMI 3015 or consent of instructor.
Estate planning; coordination of life insurance with other assets; living and testamentary trusts; life insurance trusts; wills; guardianships; and tax aspects of estate planning.

RMI 4905 Independent Research. F, W, S, SS.
Credits: 1 to 5; Prereq: Senior standing and previous work in the area selected for research.
Admissions is by the consent of the department. A written report or reports will be required.

GRADUATE COURSES

RMI 6195 Seminar in Life Insurance.
Credits: 5

RMI 6296 Seminar in Property and Liability Insurance.
Credits: 5

RMI 6910 Supervised Research.
Credits: 1 to 5††

RMI 6936 Problems in Risk Management.
Credits: 3

††Grading is on a S-U basis only.

FINE ARTS

College of Fine Arts

HUM 2510 Introduction to the Fine Arts. F, S.
Credits: 4.
An introduction to the disciplines, activities and purposes of the Fine Arts.

FOOD AND RESOURCE ECONOMICS

INSTRUCTIONAL STAFF 1977-78

Polopolus, L., Chairman; Andrew, C.O.; Carriker, R.R.; Cato, J.C.; Clark, H.B.; Clayton, K.C.; Colette, W.A.; Covey, C.D.; Davis, C.G.; Dow, J.K.; Eastwood, R.A.; Emerson, R.D.; Finlayson, E.H.; Gunter, D.L.; Holt, J.; Hooks, R.C.; Kepner, K.W.; Kiker, C.F.; Kilmer, R.L.; Langham, M.R.; Lee, J.; Loehman, E.T.; Lynne, G.D.; Mathis, K.; McPherson, W.W.; Melton, B.E.; Mulkey, W.D.; Myers, L.H.; Niles, J.A.; Prochaska, F.J.; Reynolds, J.E.; Smith, C.N.; Spreen, T.; Stewart, F.J.; Strain, J.R.; Tilley, D.S.; Upchurch, M.L.; van Blokland, P.J.; Wall, G.B.; Ward, R.W.; Wershow, J.S.; Zepp, G.A.

Agricultural Economics & Business

AEB 3103 Principles of Food and Resource Economics. F, W, S, SS.
Credits: 5
An introduction to the field of food and resource economics; principles of economics as applied to agriculture; economic problems of the agricultural industry and the individual farmer.

AEB 3111 Computers and Linear Programming for Agriculture. F, W, S.
Credits: 3
A basic understanding of the way computers operate and how they can be used. The use of computers is taught in connection with the solving of liner programming problems using standard routines. Linear programming problems deal with least cost ration formulation and maximum profit farm organization.

AEB 3123 Law Applied to Agriculture. W.
Credits: 4
Legal aspects of agricultural rights, responsibilities, and problems. Topics include agricultural estate and income taxation, zoning and land use planning, agricultural labor and consumer protection.

AEB 3133 Farm Firm Management. F, W, S, SS.
Credits: 5; Prereq: AEB 3103
Introduction to management principles. Application of economic principles, budgeting techniques and principles of strategy in agricultural firm management in the United States, particularly Florida. Emphasis is given to the financial and tax management strategies and the requirements imposed on agricultural management by local, state, and federal governmental regulatory agencies.

AEB 3141 Agricultural Finance and Rural Appraisal. W, SS.
Credits: 4; Prereq: AEB 3133.
The principles of credit and problems peculiar to financing farmers and farmers' association. Special attention to modern land appraisal principles and methods. One field trip usually required.

AEB 3300 Marketing. F, W, S, SS.
Credits: 5; Prereq: AEB 3103.
Basic principles of marketing emphasizing the value added to commodities from farms to consumers. The economic organization and operation of the food and fiber sector of the U.S. economy. Elementary price analysis and the marketing system for agricultural inputs and outputs. One field trip usually required.

AEB 3306 Agricultural Commodity Marketing. S.
Credits: 3
Basic elements and principles of agricultural commodity marketing, including special focus upon marketing problems and issues affecting the livestock, dairy, poultry, citrus, vegetable and ornamental industries. Student participation in a computerized futures trading game required.

AEB 3413 Economics of Environmental Quality. F.
Credits: 4; Prereq: AEB 3103, ECO 2023 or equivalent.
The environmental quality problem in relation to current technology, economic principles, legal and political constraints, and institutions. The applicability of these principles as related to specific problems: water and air pollution, agricultural insecticides, noise, congestion, aesthetic values, recreation.

AEB 3934 Food and Resource Economics Junior Seminar. W.
Credits: 1
An introduction to the programs, problems, sources of data and other information, and analytical techniques in food and resource economics.

AEB 4152 Farm Business Analysis. F.
Credits: 4; Prereq: AEB 3133 and consent of instructor.
Application of business, financial and economic principles in the successful management of a farm. Decision making under uncertainty on the farm, constrained by individual farm and farmer objectives. Analysis of farms using the farm game techniques. Includes visits with agribusinesses, farmers and farm management extension staff.

AEB 4164 Management of Farms in Tropical Areas. F.
Credits: 5; Prereq: AEB 3103.
The dynamics of different farming systems in the world, and the links between these systems. A socio-economic appraisal of these systems. From shifting cultivation through to permanent farming utilizing sophisticated inputs. Farmer decision making and objectives. Should be substituted for AEB 3133 for foreign students.

††Grading is on a S-U basis only.

Descriptions

FOOD AND RESOURCE ECONOMICS

AEB 4172 Basic Activity Analysis for Economic Decisions. S.
Credits: 4; Prereq: AEB 3103 and STA 3023.
Basic activity analysis applied to problems of agricultural and forestry firms. Application of linear programming methods to problems of planning over time, space, and form, with an introduction to standard linear programming computer routines and other selected operations research and systems analysis techniques.

AEB 4224 Public Policy in Agriculture. W, SS.
Credits: 4
A history of farmer attempts and accomplishments through organization and legislation to improve the economic and social status of agriculture. The basic problems and concepts involved in developing and carrying out agricultural policy. Evaluation of present legislative programs and policies affecting the farmer.

AEB 4314 Terminal Markets and Commodity Exchanges. S.
Credits: 2; Prereq: Consent of Instructor.
Terminal market organization and facilities for agricultural products, including the commodity exchanges. Visitation and inspection of firms and facilities in large terminal markets in the East or Midwest will entail a field trip of eight to ten days. This field trip will be taken during the interim between Winter and Spring quarters. A fee of $80.00 for a laboratory field trip is required. An additional sum may be required at the time the trip is made. Participation in this course is contingent upon notifying the instructor of intent not later than 20 days before the beginning of the examination period for the Winter Quarter.

AEB 4324 Case Studies of Agricultural Marketing Firms. F.
Credits: 4; Prereq: Consent of Instructor.
Case analysis and quantitative approach is used to study major problems confronted by the management in agricultural firms.

AEB 4334 Agricultural Price Analysis and Consumer Behavior. W, S.
Credits: 4; Prereq: AEB 3103, AEB 4511 and ECO 3100.
Major factors affecting agricultural prices; seasonal and cyclical fluctuations; index measures of price and quantity variables; theory and application of consumer behavior principles.

AEB 4343 Food Wholesaling. W.
Credits: 3
Exposes the student to all major aspects of operating a wholesale warehouse. These aspects are: buying, receiving, accounting, handling and storing, selecting, loading and shipping, and labor management. Student observes actual warehouse operations in a variety of warehouses—food, general and specialized, and non-food.

AEB 4344 Principles and Practices of Food Retailing. S.
Credits: 3
The importance of food retailing to the consumer, agriculture and the nation's food system. Principles and practices of food merchandizing. Organization, operations and economics of food stores. Individual attention to each store, department and product category. Special emphasis on productivity of major resources—human, physical, financial. Management methods and sales techniques are included.

AEB 4421 Agricultural Labor Economics. W.
Credits: 3; Prereq: AEB 3103.
Survey course primarily for students in related agricultural disciplines. Topics covered include agricultural labor market analysis, labor policies and regulations, agricultural labor management, labor relations, and collective bargaining in agriculture.

††Grading is on a S-U basis only.

AEB 4434 Land and Water Economics. W.
Credits: 4; Prereq: AEB 3103 and ECO 3100.
Principles governing the use of agricultural, forest, range and recreational land in Florida and the Caribbean area with emphasis on supply and demand, location, economic value, tenure, taxation, and conservation.

AEB 4444 Regional Economics and Policy Analysis. S.
Credits: 5
Theory and practice of community and regional policy analysis. Theories of regional growth and policy implications, techniques of regional analysis, and programs to influence spatial distribution of economic activity.

AEB 4511 Quantitative Analysis in Food and Resource Economics. F, S.
Credits: 4; Prereq: MAC 3311.
Application of calculus and matrix algebra to topics in food and resource economics.

AEB 4672 International and Interregional Trade in Agriculture. W.
Credits: 3; Prereq: AEB 3300, equivalent or consent of instructor.
Behavior of economic forces associated with trade in food and agricultural products between Florida and other regions in the U.S. and between countries. Economic principles and analytical techniques applied to the study of supply, demand and prices for Florida and U.S. imports and exports of agricultural commodities. Consideration of the competitive position of Florida agriculture is state, national, and foreign markets.

AEB 4726 Income and Employment of Rural People. S.
Credits: 5; Prereq: AEB 3103 or ECO 3100 and ECO 3251.
Effects of economic, technical and institutional conditions upon employment and incomes of rural people. Analysis of poverty and poverty programs. The human agent and group decision making in rural economic development.

AEB 4905 Special Problems in Food and Resource Economics. F, W, S, SS.
Credits: 1 to 5; Prereq: Consent of instructor.
Individual study in selected problem areas. Aspects of problems of interest to the student and agreeable to the instructor. May be repeated with change of content up to a maximum of 6 credits.

AEB 4931 Special Topics in Food and Resource Economics. F, W, S, SS.
Credits: 1 to 5; Prereq: Consent of instructor.
Lectures, conferences or laboratory covering specially selected topics in food and resource economics. May be repeated with change of content up to a maximum of 6 credits.

AEB 4935 Food and Resource Economics Senior Seminar. S.
Credits: 1; Prereq: Senior classification and AEB 3103.
Lectures and discussions on current problems and special areas of interest in Food and Resource Economics. Students make reports on approved topics.

AEB 4949 Full Time Practical Work Experience in Food and Resource Economics. F, W, S, SS.
Credits: 1 to 4††; Prereq: Prior arrangement with advisor, approval of Department Chairman and Dean.
Practical work must be a new experience and related to the field of study.

GRADUATE COURSES

AEB 5612 Foreign Agricultural Development Planning.
Credits: 5

AEB 6182 Intermediate Agricultural Production Economics. F.
Credits: 4

AEB 6184 Economics of Agricultural Production I. W.
Credits: 5

AEB 6186 Economics of Agricultural Production II. S.
Credits: 5

AEB 6252 Foundations of Agricultural Policies. F.
Credits: 3

AEB 6263 Agricultural Policies and Programs in the United States. S.
Credits: 3

AEB 6363 Intermediate Consumption Economics and Agricultural Marketing. W.
Credits: 4

AEB 6373 Consumption and Demand. S.
Credits: 5

AEB 6383 Industrial Organization of Agricultural Markets. F.
Credits: 4

AEB 6384 Marketing Economics in Agriculture. SS.
Credits: 4

AEB 6385 Management Strategies for Agribusiness Firms. S.
Credits: 4

AEB 6428 Research Seminar in Econometrics. S.
Credits: 1 to 5

AEB 6453 Natural Resource Economics. S.
Credits: 4

AEB 6455C Natural Resource Institutions. SS.
Credits: 4

AEB 6465 Natural Resource Policy. F.
Credits: 4

AEB 6483 Regional Policy and Development. S.
Credits: 5

AEB 6533 Nonstochastic Models. SS.
Credits: 5

AEB 6553 Elements of Econometrics. W.
Credits: 4

AEB 6571 Econometric Methods I. F.
Credits: 5

AEB 6572 Econometric Methods II. W.
Credits: 5

AEB 6592 Activity Analysis for Economic Decisions. F.
Credits: 4

AEB 6625 Regional Economics. F.
Credits: 5

AEB 6634 Agricultural Development Administration. F.
Credits: 4

AEB 6645 Economic Development and Agriculture. W.
Credits: 5

AEB 6651 Agriculture's Role in the Growth of Latin American Nations. SS.
Credits: 4

AEB 6674 International Agricultural Policy and Trade. W.
Credits: 5

AEB 6726 Rural Welfare and Development Policy. F.
Credits: 5

AEB 6815 Science and Research Methodology. S.
Credits: 3

AEB 6905 Problems in Food and Resource Economics. F, W, S, SS.
Credits: 1 to 6; maximum of 6 credits.

AEB 6910 Supervised Research.
Credits: 1 to 5††

AEB 6933 Special Topics in Food and Resource Economics. F, W, S, SS.
Credits: 1 to 9; maximum of 9 credits.

AEB 6940 Supervised Teaching. F, W, S, SS.
Credits: 1 to 5††

AEB 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15††

AEB 7980 Doctoral Research. F, W, S, SS.
Credits: 1 to 15††

FOOD SCIENCE AND HUMAN NUTRITION
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Dennison, R.A., Chairman; Ahmed, E.M.; Appledorf, H.; Araujo, P.E.; Bailey, L.B.; Bates, R.P.; Deng, J.; Dinning, J.S.; Gregory, J.F.; Koburger, J.A.; Matthews, R.F.; Moye, H.A.; Oblinger, J.L.; Robbins, R.C.; Schmidt, R.H.; Surak, J.G.; Thompson, N.P.; Wagner, P.A.; Wheeler, W.B. The following faculty from other departments and units instruct in the Food Science program: Bachman, K.C.; Braddock, R.J.; Crandall, P.G.; Emerson, A.P.; Janky, D.M.; Kesterson, J.W.; Richter, R.L.; Smith, K.L.; Thomas, W.C.; West, R.L.

Dietetics

DIE 4125 Food Systems Management. SS.
Credits: 4; Prereq: FOS 3042 and HUN 3221.
Aspects of quantity food service systems; technological developments; management and physical facilities.

DIE 4244 Nutrition and Disease. W.
Credits: 4; Prereq: HUN 4241.
Diseases related to nutrient intake; nutritional requirements created by diseases. These will be coordinated with analysis of diets used in medical treatments.

Food Science

FOS 2001 Man's Food. F, W, S.
Credits: 2
World population and food problems. Relationship of man's health to production, conservation and consumption patterns.

FOS 2002 Food and Consumer Protection. W.
Credits: 2
Technological problems and changing attitudes toward new products, new food sources, food labelling additives, nutrition, wholesomeness, sanitation, pollution and the reponsibilities of the food industry.

FOS 2003 Toxic Substances in Foods. S.
Credits: 1
Historical development, the current status of the problem areas and the impact upon society of hazards in foods will be discussed from a nontechnical standpoint.

FOS 3042 Introductory Food Science. F, S.
Credits: 4; Prereq: CHM 2041.
The student will be exposed to the commodities selected for human consumption and the methods used by food technologists to prolong shelf life, retard spoilage and ensure quality. The principles upon which the various processing methodologies are based will be stressed.

FOS 4222C Food Microbiology. W.
Credits: 5; Prereq: MCB 3013 and MCB 3013L.
Sources of biological contamination and their control during harvesting, handling, processing and storage of foods; food fermentation; Hygiene and sanitation; and methods used to examine foods for total microbial content and for specific groups of organisms.

FOS 4252 Food Epidemiology. W.
Credits: 4; Prereq: HUN 2201, FOS 4222, or consent of instructor.
Introduction to the principles and practices of epidemiology with special emphasis on the epidemiological aspects of foodborne, waterborne and nutritional diseases.

FOS 4311C Food Chemistry. F.
Credits: 5; Prereq: FOS 3042, Organic Chemistry.
Relationship of composition to the properties of foods and the changes which occur during processing, storage and utilization.

FOS 4321C Food Analysis. S.
Credits: 5; Prereq: FOS 4311, Physics.
Principles and practice of physical and chemical methods for analyzing foods.

FOS 4427C Principles of Food Processing. S.
Credits: 5; Prereq: FOS 3042, FOS 4311, FOS 4222; or consent of instructor.
Principles of processing and preserving foods by cooling, freezing, heating, dehydrating, concentrating, irradiating, fermenting and use of chemicals.

FOS 4551C Fruit and Vegetable Processing. W.
Credits: 4; Prereq: CHM 2042.
Principles and application of processing methods for fruits and vegetables and the control of product quality.

FOS 4722C Statistical Quality Control and Sensory Evaluation of Foods. W.
Credits: 3; Prereq: STA 3023; 8 credits of FOS 4000 level course work recommended.
Application of statistics and sensory evaluation to selection of raw products and quality control during processing, storage and marketing.

FOS 4731 Government Regulations and the Food Industry. F.
Credits: 2
Governmental laws and rules regulating food wholesomeness and freedom from disease causing agents; food handling, processing and distribution under sanitary conditions; food ingredients and the labeling of food and food type products.

FOS 4931 Food Science and Human Nutrition Seminar. S.
Credits: 1

FOS 4933 Special Problems in Food Science and Human Nutrition. F, W, S, SS.
Credits: 1 to 7
Individual research work in various phases of Food Science. May be repeated up to a maximum of 7 credits.

FOS 4949 Full Time Practical Work Experience in Food Science and Human Nutrition. F, W, S, SS.
Credits: 1 to 4; S-U Grade only. Prereq: Prior arrangement with adviser, approval of Department Chairman and Dean. One term employment in food industry including extra work according to a pre-approved outline. Practical work under industrial supervision as set forth in College of Agriculture regulations.

Human Nutrition

HUN 2201 Fundamentals of Human Nutrition. W.
Credits: 4
The properties, functions, requirements, interrelationships and metabolism of nutrients. In order to satisfy the nutrition requirement of the American Dietetic Association it is necessary to take HUN 3221.

HUN 3221 Introduction to Human Nutrition. S.
Credits: 4; Prereq: APB 3223; BCH 3713 or 4313.
This course will serve as an introduction to aspects of food habits, food resources and diet in health and disease. The metabolic relationships of various food constituents will be discussed with emphasis upon their roles in physiological processes as well as variations of nutritional requirements in response to stress situation.

HUN 4241 Human Nutrition. F.
Credits: 4; Prereq: HUN 3221.
A discussion of the chemical, physiological and cultural considerations underlying the application of nutrition to the human.

GRADUATE COURSES

Food Science

FOS 6226C Advanced Food Microbiology.
Credits: 4

FOS 6315C Advanced Food Chemistry.
Credits: 4

FOS 6355C Instrumental Analysis and Separations.
Credits: 4

FOS 6371C Pesticide Analysis.
Credits: 4

FOS 6428C Food Processing Systems.
Credits: 4

FOS 6435C Food Product Development.
Credits: 4

FOS 6455C Industrial Food Fermentations.
Credits: 4

FOS 6641 Nutritional Aspects of Foods.
Credits: 4

FOS 6726C Psychophysical Aspects of Foods.
Credits: 4

FOS 6905 Problems in Food Science and Human Nutrition.
Credits: 1 to 6; maximum of 12 credits.

FOS 6910 Supervised Research.
Credits: 1 to 5††

FOS 6915 Research Planning.
Credits: 1 to 5††

FOS 6936 Topics in Food Science and Human Nutrition.
Credits: 1 to 4; maximum of 6 credits.

FOS 6938 Food Science and Human Nutrition Seminar.
Credits: 1††

FOS 6940 Supervised Teaching.
Credits: 1 to 5††

FOS 6971 Master's Research.
Credits: 1 to 15††

Human Nutrition

HUN 6191 Nutritional Status and Food Policy.
Credits: 3

††Grading is on a S-U basis only.

HUN 6245 Advanced Human Nutrition.
Credits: 3

HUN 6292 Current Topics in Human Nutrition.
Credits: 3

HUN 6301 Nutritional Aspects of Carbohydrates and Lipids.
Credits: 3

HUN 6321 Proteins and Amino Acids in Nutrition.
Credits: 3

The following courses are offered through other departments in the College of Agriculture and are part of the overall Food Science and Human Nutrition program. Certain of these courses are required in either the Food Science curriculum or Food and Consumer Protection curriculum as detailed in the College of Agriculture general information section of the catalog.

ANS 4635C Meat Processing. S.
Credits: 4; Prereq: CHM 2041 and MAC 1132.
Methods used for processing and the Federal and State Regulations for meat.

DAS 4614C Dairy Technology. F.
Credits: 5
Nature and properties of milk constituents; effects of processing on milk constituents; defects in dairy foods and their causes; dairy foods processing; and analytical procedures for processing and quality control.

MAG 4062C Principles of Food Engineering. W.
Credits: 5; Prereq: MAC 1132 and 5 credits of physics.
The functional requirements and principles of operation of systems for handling and processing of food and agricultural products.

PSE 4611C Poultry Products Technology. W.
Credits: 4; Prereq: ASG 3003.
Processing methods, composition, nutritive value, flavor, palatability and shelf-life of poultry, meat and eggs.

VES 4611C Environmental Toxicology and Public Health. F.
Credits: 4; Prereq: Organic Chemistry.
Drugs and toxicants, their metabolism as influenced by food or residues; drug induced deficiency diseases; adverse reactions; mycotoxins; common poisons, their diagnosis, prevention and treatment.

FOREIGN LANGUAGES

College of Arts and Sciences

Foreign Language — Cross Departmental**

Foreign and Biblical Languages

FOL 2905 Individual Work in Foreign Languages. F, W, S.
Credits: 3 to 5; Prereq: Permission of the department.

FOL 3730 Introduction to African Linguistics. W.
Credits: 4; Prereq: LIN 2010 or equivalent.
A linguistic survey of sub-Saharan African languages.

FOL 4905 Individual Work. F, W, S, SS.
Credits: 3 to 5; Prereq: Permission of the department.

CHINESE

Chinese**

INSTRUCTIONAL STAFF 1977-78

Ch'u, C.C.; Johnson, I.

Chinese Language

CHI 1120 Beginning Chinese 1. F.
Credits: 5

CHI 1121 Beginning Chinese 2. W.
Credits: 5; Prereq: CHI 1120 (grade of C or better, or S) or equivalent.

CHI 1122 Beginning Chinese 3. S.
Credits: 5; Prereq: CHI 1121 (grade of C or better, or S) or equivalent.

CHI 2201 Second-Year Chinese. F.
Credits: 4; Prereq: CHI 1122 or equivalent.

CHI 2202 Second-Year Chinese. W.
Credits: 4; Prereq: CHI 2201 or equivalent.

CHI 3500 Chinese Culture. F, W.
Credits: 4
An introduction to Chinese culture with emphasis on its philosophy, language, literature, art and people as a whole. All readings in English.

JAPANESE

Japanese**

INSTRUCTIONAL STAFF 1977-78

Swann, T.

Japanese Language

JAP 1120 Beginning Japanese 1. F.
Credits: 5

JAP 1121 Beginning Japanese 2. W.
Credits: 5; Prereq: JAP 1120 (grade of C or better, or S) or equivalent.

JAP 1122 Beginning Japanese 3. S.
Credits: 5; Prereq: JAP 1121 (grade of C or better, or S) or equivalent.

GERMANIC AND SLAVIC LANGUAGES AND LITERATURES

INSTRUCTIONAL STAFF 1977-78

Schurer, E.I., Chairman; Barksdale, E.C.; Buckley, M.T.; Johnson, L.P.; Johnston, O.W.; Marshall, H.B.; Popp, D.M.; Sullivan, W.J.; Walker, R.E.;
Undergraduate Coordinator: D.M. Popp
Graduate Coordinator: C.J. Gellinek

Students who have had previous formal training in German or Russian at another institution are required to take a placement test before registering.

An undergraduate major is offered in both German and Russian. Students interested in these programs should consult a departmental adviser at the earliest opportunity. The major consists of 40 quarter hours above the second-year college level (GER 2200 or equivalent) including the departmental requirements GER 4840 or RUS 4700 (for Russian students).

NCATE requirements formulated by the College of Education have to be met if Florida Teacher Certification is desired.

A student majoring in German or Russian who desires to be graduated with departmental honors should apply to the department near the end of his Junior year. To qualify for departmental honors, the student must achieve a 3.5 grade point average in all courses in his major field above the GER 2200 level. An additional requirement is that the student complete with distinction a special project assigned as honors work during the Senior year, and be recommended by three or more members of the departmental staff.

German Language

GER 1120 Beginning German 1. F, W, S, SS.
Credits: 5

GER 1121 Beginning German 2. F, W, S, SS.
Credits: 5; Prereq: GER 1120 (grade of C or better or S), or the equivalent.

GER 1122 Beginning German 3. F, W, S, SS.
Credits: 5; Prereq: GER 1121 (grade of C or better or S), or the equivalent.

GER 2200 Readings in German Culture. F, W, S.
Credits: 4; Prereq: GER 1122, or the equivalent.

GER 2250 Readings in Scientific German. F, W.
Credits: 4; Prereq: GER 1122, or the equivalent.

GER 2930 Variable Languages: Danish, Dutch, Norwegian, Swedish.
Credits: 5 to 15

GER 3410 Understanding and Speaking German. F, S.
Credits: 4; Prereq: GER 2200, or the equivalent.

GER 3420 Speaking and Writing German. W, SS.
Credits: 4; Prereq: GER 2200, or the equivalent.

GER 3500 The Impact of German Culture. F.
Credits: 4; Prereq: GER 2200.
Introduction to German culture, with emphasis on the development of the Humanities.

GER 3501 The Contemporary German. W.
Credits: 4; Prereq: GER 2200.

German Literature in Translation

GET 2480 Introduction to Modern German Literature in Translation. F.
Credits: 4; Prereq: None. Not for major credit.

German Literature (Writings)

GEW 3100 Masterpieces of German Literature 1. W.
Credits: 5; Prereq: GER 2200, or the equivalent.
Study of representative texts from the Old High German period to Martin Optiz.

GEW 3101 Masterpieces of German Literature 2. S.
Credits: 5; Prereq: GER 2200, or the equivalent.
Study of representative texts from the Classical Period to the present time.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

German Language

GER 4400 Advanced Speaking and Writing. F.
Credits: 4; Prereq: GER 3420, or the equivalent.

GER 4840 The Evolution of the German Language. W.
Credits: 4; Prereq: GER 3410 and GER 3420, or the equivalent.

German Literature (Writings)

GEW 4300 Trends in the German Theater. W, SS.
Credits: 4; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.

GEW 4332 German Love and Death Poetry. S.
Credits: 4; Prereq: GER 3410-3420 or the equivalent.

GEW 4400 Minstrels and Storytellers. S.
Credits: 4; Prereq: Departmental approval.

GEW 4513 Reason Versus Genius. F.
Credits: 4; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.

GEW 4530 The Golden Age.
Credits: 4; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.

GEW 4542 Romantics and Revolutionaries.
Credits: 4; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.

GEW 4554 German Literature and Social Change. W.
Credits: 4; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.

GEW 4730 Kafka, Hesse, Brecht and Grass. F.
Credits: 4; Maximum 16 credits. Prereq: GER 3100, 3101, or the equivalent.

GEW 4750 Women in German Literature. F.
Credits: 4; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.
A variable content course, focusing on the figure of women in literature, female writers, and female critics.

GEW 4820 Foundations of Literary Study. F.
Credits: 5; Prereq: GER 3410-3420 and GER 3100-3101, or the equivalent.

GEW 490S Individual Work. F, W, S, SS.
Credits: 1 to 5
Available only by special arrangement. May be repeated with change of content to a maximum of 16 credits.

GRADUATE COURSES

German Language

GER 6050 Beginning German for Graduate Students 1. F.S.
Credits: 4††

GER 6051 Beginning German for Graduate Students 2. W. SS.
Credits: 4

GER 640S Advanced Speaking and Writing Exercises.
Credits: 4

GER 6841 The Bible in Gothic.
Credits: 5

GER 6845 The Evolution of the German Language. W.
Credits: 4

German Literature (Writings)

GEW 630S Studies in German Drama and Theater. W, SS.
Credits: 4

GEW 6335 Studies in German Poetry. S.
Credits: 4

GEW 6405 Introduction to Middle High German Literature.
Credits: 4

GEW 6401 Middle High German Love Poetry.
Credits: 4

GEW 6425 Fate, Fortune and Frivolity. W.
Credits: 5

GEW 6489 Post-War Literature: East and West.
Credits: 5

GEW 6517 Eighteenth Century German Literature. F.
Credits: 4

GEW 6535 Studies in German Classical Literature.
Credits: 4

GEW 6545 Studies in Romantic or Post-Romantic Literature.
Credits: 4

GEW 6558 Nineteenth Century German Literature. W.
Credits: 4

GEW 6600 The Genius of Goethe. S.
Credits: 5

GEW 6735 Studies in Modern German Literature. F.
Credits: 4

GEW 6755 The Contribution of Women in German Literary History.
Credits: 4

GEW 6825 Foundations of German Literary Criticism.
Credits: 5; max. of 15.

GEW 6900 Special Study in Germanic Languages and Literature.
Credits: 5; maximum of 15 credits.

GEW 6905 Individual Work.
Credits: 1 to 5; maximum of 16 credits.

GEW 6910 Supervised Research.
Credits: 1 to 5††

GEW 6938 Seminar in Germanic Studies.
Credits: 5
Rotating topics.

GER 6940 Supervised Teaching.
Credits: 1 to 5††

GEW 6971 Master's Research.
Credits: 1 to 15††

Icelandic Literature (Writings)

ICW 6400 The Viking Sagas. S.
Credits: 4

ICW 6401 Readings in Sagas and Scaldic Poetry.
Credits: 4

Polish Language

POL 1120 Beginning Polish 1. F.
Credits: 5

POL 1121 Beginning Polish 2. W.
Credits: 5; Prereq: POL 1120 (grade of C or better or S), or the equivalent.

POL 1122 Beginning Polish 3. S.
Credits: 5; Prereq: POL 1121 (grade of C or better or S), or the equivalent.

POL 1130 Intensive Polish. S, SS.
Credits: 10 to 15
The equivalent of Polish, 1120-1121-1122. Beginning Polish sequence.

POL 2210 Intermediate Polish. F, SS.
Credits: 1 to 15

Polish Literature (Writings)

PLW 4102 Polish Literature.
Credits: 5
With change of content may be repeated for credit twice.

PLW 4905 Individual Work. F, W, S, SS.
Credits: 1 to 15

Russian Language

RUS 1120 Beginning Russian 1. F.
Credits: 5

RUS 1121 Beginning Russian 2. W.
Credits: 5; Prereq: RUS 1120 (grade of C or better or S), or the equivalent.

RUS 1122 Beginning Russian 3. S.
Credits: 5; Prereq: RUS 1121 (grade of C or better or S), or the equivalent.

RUS 2200 Second Year Russian. F.
Credits: 4; Prereq: RUS 1122 or the equivalent.

RUS 3240 Oral Practice in Russian. W.
Credits: 4; Prereq: RUS 2200 or the equivalent.

RUS 4300 Advanced Grammar and Composition. S.
Credits: 4; Prereq: RUS 3240 or the equivalent.

RUS 4700 Structure of the Russian Language. F.
Credits: 4; Prereq: RUS 3240 or the equivalent.

RUS 4840 History of the Russian Language. S.
Credits: 4; Prereq: RUS 2200 or the equivalent.

Russian Literature in Translation

RUT 2110 The Russian Experience: Literature in Translation. F.
Credits: 4; Prereq: None. Not for major credits.

Russian Literature (Writings)

RUW 4100 Introduction to Russian Literature 1.
Credits: 5; Prereq: RUS 2200 or the equivalent.
A survey of Russian literary history from Von Vizin through Turgenyev, Dostoyevsky and early Tolstoy.

RUW 4101 Introduction to Russian Literature 2.
Credits: 5; Prereq: RUS 2200 or the equivalent.
A survey of Russian literary history from Tolstoy to the present day.

RUS 490S Individual Work. F, W, S, SS.
Credits: 1 to 5; Prereq: RUS 2200 or the equivalent and permission of the professor in charge.
With change of content, may be repeated for additional credit.

GRADUATE COURSES

Russian Language

RUS 5301 Grammar and Composition Exercises.
Credits: 4

RUS 5701 Structure of Russian.
Credits: 4

RUS 5845 The Development of the Russian Language.
Credits: 4

Russian Literature (Writings)

RUW 5120 Survey of Russian Literary History.
Credits: 5

RUW 5121 Survey of Modern Russian Literature.
Credits: 5

RUW 5905 Individual Work. F, W, S, SS.
Credits: 1 to 4

ROMANCE LANGUAGES AND LITERATURES

INSTRUCTIONAL STAFF 1977-78

Conner, J.W., Chairman; Allen, J.J.; Baker, S.R.; Bonneville, D.A.; Cailler, B.; Casagrande, J.; Coulson, C.B.; DerHoussikian, H.; Diller, G.T.; Garcia, R.; Gay-Crosier, R.; Hammond, R.; Hower, A.; Ibarra F.; Lasley, M.M.; Monroe, J.; Ramirez, A.; Rice, M.; Schulman, I.A.; Smith, A.B.

An undergraduate major is offered in French and Spanish. The major consists of 36 quarter hours above the second-year college level, plus a subsidiary requirement of LIN 2010 or LIN 3030. Students intending to major in a foreign language should consult a department adviser at the earliest opportunity.

To graduate with departmental honors a student must attain a 3.5 average in his major

††Grading is on a S-U basis only.

(excluding courses below the 3000-level), and complete in his Senior year some special project approved as honors work.

Students who plan to continue the study of a language which they began in high school or another college are required to take a placement test before registering.

Romance Languages

FOL 6732 Introduction to Romance Linguistics.
Credits: 5

FOW 6930 Special Study in Romance Languages and Literatures.
Credits: 3 to 5

French

French Language

FRE 1110 Beginning French 1. F, W, S, SS.
Credits: 5
Emphasis on the fundamentals of French grammar. Course work includes drill in pronunciation and simple dialogs, vocabulary building and reading. This is the foundation course in a basic sequence. Prospective majors and students who wish to develop a broad competence in French should continue with FRE 1121 and FRE 1122 which emphasize the oral-aural approach; those who wish to concentrate on developing reading proficiency should continue with FRE 1111 and FRE 1112.

FRE 1111 Beginning French (Alternate) 2. F, W, S, SS.
Credits: 5; Prereq: FRE 1110 (grade of C or better, or S) or the equivalent.

FRE 1112 Beginning French (Alternate) 3. F, W, S, SS.
Credits: 5; Prereq: FRE 1111 (grade of C or better, or S) or the equivalent.

FRE 1121 Beginning French 2. F, W, S, SS.
Credits: 5; Prereq: FRE 1110 (grade of C or better, or S) or the equivalent.

FRE 1122 Beginning French 3. F, W, S, SS.
Credits: 5; Prereq: FRE 1121 (grade of C or better, or S) or the equivalent.

FRE 2200 Intermediate French. F, W, S, SS.
Credits: 4; Prereq: FRE 1122; or FRE 1112 with permission of department.

FRE 2240 Oral Practice in French. F, W, S.
Credits: 4; Prereq: FRE 2200, or the equivalent.

FRE 3300 Grammar and Composition 1. F, W, S.
Credits: 4; Prereq: FRE 2200, or the equivalent.

FRE 3320 Grammar and Composition 2. F, W, S.
Credits: 4; Prereq: FRE 3300, or the equivalent.

FRE 3500 French Civilization. W, SS.
Credits: 4; Prereq: FRE 2200, or the equivalent.
Introduction to French culture, with emphasis on contemporary institutions.

FRE 4421 Composition and Syntax. W, SS.
Credits: 5; Prereq: FRE 3300, 3320 and FRW 3100, 3101, 3102, or the equivalent.

FRE 4780 French Phonetics. F.
Credits: 4; Prereq: FRE 3300, 3320 and an introductory course in linguistics.

FRE 4850 Introduction to the Structure of French. S.
Credits: 4; Prereq: FRE 3300, 3320 and an introductory course in linguistics.

FRE 4905 Individual Work. F, W, S, SS.
Credits: 2 to 5; Prereq: Permission of the department.

GRADUATE COURSES

FRE 5423 Advanced French Composition.
Credits: 5

FRE 5840 History of the French Language.
Credits: 4

FRE 5851 The Structure of French.
Credits: 4

FRE 6050 Beginning French for Graduate Students 1.
Credits: 4††

FRE 6051 Beginning French for Graduate Students 2.
Credits: 4

FRE 6730 Special Study in French Linguistics.
Credits: 4

FRE 6785 Advanced French Phonetics.
Credits: 4

French Literature in Translation.

FRT 2276 The French Novel of the 19th and 20th Centuries in English Translation. S.
Credits: 4; Prereq: None. Not for major credit.
Analysis and interpretation of selected novels by authors such as Balzac, Stendhal, Flaubert, Zola, Proust, Gide, Malraux, Camus, etc.

FRT 2301 French Classical Drama in English Translation.
Credits: 4; Prereq: None. Not for major credit.
Analysis and interpretation of selected plays by authors such as Racine, Corneille, Moliere, etc.

French Literature (Writings)

FRW 3100 Introduction to French Literature 1. W.
Credits: 3; Prereq: FRE 2200, or the equivalent.
Study of representative texts from the Middle Ages to the Classical period.

FRW 3101 Introduction to French Literature 2. F.
Credits: 3; Prereq: FRE 2200, or the equivalent.
Study of representative texts from the Classical period to the Romantics.

FRW 3102 Introduction to French Literature 3. S.
Credits: 3; Prereq: FRE 2200, or the equivalent.
Study of representative texts from the Romantics to the present day.

FRW 4216 Readings in Seventeenth-Century French Prose.
Credits: 4; Prereq: FRW 3100-3102 and FRE 3300-3320, or the equivalent.

FRW 4275 Readings in the Novel of the Eighteenth-Century. S.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.

FRW 4300 Readings in Seventeenth-Century French Drama. W.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.

FRW 4350 Survey of Modern French Poetry. F.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.
The development of French poetry from Baudelaire to the present.

FRW 4410 French Medieval Literature. F.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.

FRW 4420 Sixteenth-Century French Literature.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.
Study of literary and intellectual currents of the period. Selected readings from Marot, Sceve, DuBellay, Ronsard, D'Aubigne, Rabelais, Marguerite de Navarre, Montaigne.

FRW 4480 Readings in Twentieth-Century French Literature.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.

FRW 4535 Survey of French Romantic Literature F.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.
Study of representative texts, with emphasis on work of Lamartine, Vigny, Hugo, and Musset.

FRW 4555 Introduction to Realism and Naturalism. S.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.
The novel and its development from Stendhal to Zola.

FRW 4710 Introduction to the Philosophic Movement.
Credits: 4; Prereq: FRE 3300-3320 and FRW 3100-3102, or the equivalent.
Readings from representative authors of the eighteenth-century, particularly Voltaire, Diderot, and Rousseau.

FRW 4770 Black African Literature of French Expression. S.
Credits: 4
An introduction to the works of modern Black writers from Africa and the Caribbean, notably Cesaire, Senghor, Damas, Roumain, B. Diop, Beti, Oyono, Laye.

GRADUATE COURSES

FRW 5481 Twentieth-Century French Literature.
Credits: 4

FRW 5556 Realism and Naturalism.
Credits: 4

FRW 6215 French Prose of the Renaissance.
Credits: 4

FRW 6217 Seventeenth-Century French Prose.
Credits: 4

FRW 6276 The Novel of the Eighteenth-Century.
Credits: 4

FRW 6288 Contemporary French Novel.
Credits: 4

FRW 6311 Seventeenth-Century French Drama.
Credits: 4

FRW 6318 French Classical Comedy.
Credits: 4

FRW 6328 Contemporary French Theater.
Credits: 4

FRW 6340 French Poetry of the Renaissance.
Credits: 4

FRW 6351 Modern French Poetry.
Credits: 4

FRW 6415 Old French Literature 1.
Credits: 4

FRW 6416 Old French Literature 2.
Credits: 4

FRW 6510 Baroque and Preclassicism.
Credits: 4

FRW 6536 The Romantic Period.
Credits: 4

FRW 6560 The French Symbolist Movement.
Credits: 4

FRW 6711 The Philosophic Movement.
Credits: 4

FRW 6755 Twentieth-Century Caribbean and West African Literature of French Expression.
Credits: 4

FRW 6805 Introduction to Graduate Study and Research.
Credits: 4

FRW 6825 Literary Criticism in France.
Credits: 4

FRW 6900 Special Study in French Literature.
Credits: 4

FRW 6905 Individual Work.
Credits: 2 to 5

FRW 6910 Supervised Research.
Credits: 1 to 5††

FRE 6940 Supervised Teaching.
Credits: 1 to 5††

FRW 6971 Master's Research.
Credits: 1 to 15††

FRW 7980 Doctoral Research.
Credits: 1 to 15††

Italian

Italian Language

ITA 1120 Beginning Italian 1. F.
Credits: 5

ITA 1121 Beginning Italian 2. W.
Credits: 5; Prereq: ITA 1120 (grade of C or better, or S) or equivalent.

ITA 1122 Beginning Italian 3. S.
Credits: 5; Prereq: ITA 1121 (grade of C or better, or S) or equivalent.

ITA 3400 Composition and Conversation.
Credits: 4; Prereq: ITA 1122, or the equivalent.

ITA 4905 Individual Work.
Credits: 2 to 5

Italian Literature (Writings)

ITW 3100 Introduction to Italian Literature 1.
Credits: 4; Prereq: ITA 1122, or the equivalent.
The major Italian authors from the Middle Ages through the Early Renaissance.

ITW 3101 Introduction to Italian Literature 2.
Credits: 4; Prereq: ITA 1122, or the equivalent.
The major Italian authors from the Renaissance through the eighteenth-century.

ITW 3102 Introduction to Italian Literature. 3.
Credits: 4; Prereq: ITA 1122, or the equivalent.
The major Italian authors of the nineteenth and twentieth-centuries.

Linguistics

LIN 3030 Comparative Study of Foreign Languages. W, SS.
Credits: 4
Emphasis on historical linguistics.

Portuguese

Portuguese Language

POR 1120 Beginning Portuguese 1. F.
Credits: 5
This sequence POR 1120, 1121, 1122 is a basic course in Portuguese stressing the language as spoken in Brazil.

POR 1121 Beginning Portuguese 2. W.
Credits: 5; Prereq: POR 1120 (grade of C or better, or S) or the equivalent.

POR 1122 Beginning Portuguese 3. S.
Credits: 5; Prereq: POR 1121 (grade of C or better, or S) or the equivalent.

POR 3130 Introductory Portuguese (accelerated). W, SS.
Credits: 5; Prereq: SPN 2200 or FRE 2200 or the equivalent.

POR 3240 Oral Practice in Portuguese. W.
Credits: 4; Prereq: POR 1122, or the equivalent.

POR 3241 Composition and Conversation. F.
Credits: 4; Prereq: POR 1122, or the equivalent.

POR 4770 Portuguese Phonetics and Phonology. S.
Credits: 4; Prereq: POR 1122 and an introductory course in linguistics.

Portuguese Literature (Writings)

POW 3100 Introduction to Portuguese Literature. F.
Credits: 4; Prereq: POR 1122, or permission of the department.
A study of major Portuguese writers from the medieval to the modern period.

POW 3130 Introduction to Brazilian Literature 1. W.
Credits: 3; Prereq: POR 1122, or the permission of the department.
A study of Brazilian authors of the nineteenth and twentieth-centuries.

POW 3131 Introduction to Brazilian Literature 2. S.
Credits: 3; Prereq: POR 1122, or permission of the department.
A study of major contemporary writers.

POW 4700 Machado De Assis and His Contemporaries. W.
Credits: 4

POW 4710 Eca De Queiros and His Contemporaries. S.
Credits: 4

POW 4905 Individual Work.
Credits: 2 to 5

GRADUATE COURSES

POW 6275 The Nineteenth-Century Brazilian Novel.
Credits: 4

POW 6276 The Twentieth-Century Brazilian Novel.
Credits: 4

POW 6385 Brazilian Poetry.
Credits: 4

POW 6386 Brazilian Drama.
Credits: 4

POW 6400 Medieval and Renaissance Portuguese Literature.
Credits: 4

POW 6930 Special Study in Brazilian or Portuguese Literature.
Credits: 3 to 5

Portuguese Literature in Translation

PRT 2490 Modern Brazilian Literature in Translation. S.
Credits: 4; Prereq: None.
Readings of outstanding Brazilian novels, short stories, and plays. Designed especially for students with little or no knowledge of Portuguese who desire to study Brazilian life, character, and culture as portrayed in the writings of some of Brazil's greatest authors.

Spanish Language

SPN 1100 Beginning Spanish 1. F, W, S, SS.
Credits: 5
SPN 1100, 1121, 1122 is the basic sequence intended for students who wish to develop a broad competence in Spanish. It emphasizes the oral-aural aspects of the language and requires extensive use of the language laboratory.

SPN 1110 Beginning Spanish (Alternate) 1. F, W, S, SS.
Credits: 5
SPN 1110, 1111, 1112 is the basic sequence designed for students who wish to develop the ability to understand written and spoken Spanish. Those interested in acquiring an active command of the language should take the 1100-1121-1122 sequence.

SPN 1111 Beginning Spanish (Alternate) 2. F, W, S, SS.
Credits: 5; Prereq: SPN 1110 (grade of C or better, or S) or the equivalent.

SPN 1112 Beginning Spanish (Alternate) 3. F, W, S, SS.
Credits: 5; Prereq: SPN 1111 (grade of C or better, or S) or the equivalent.

SPN 1121 Beginning Spanish 2. F, W, S, SS.
Credits: 5; Prereq: SPN 1100 (grade of C or better, or S) or the equivalent.

SPN 1122 Beginning Spanish 3. F, W, S, SS.
Credits: 5; Prereq: SPN 1121 (grade of C or better, or S) or the equivalent.

SPN 2200 Intermediate Spanish. F, W, S, SS.
Credits: 4; Prereq: SPN 1122, or SPN 1112 with permission of department.

SPN 2240 Oral Practice in Spanish. F, W, S.
Credits: 4; Prereq: SPN 2200, or the equivalent.

SPN 3300 Grammar and Composition 1. F, W, S.
Credits: 4; Prereq: SPN 2200; or the equivalent.

SPN 3301 Grammar and Composition 2. F, W, S.
Credits: 4; Prereq: SPN 3300, or the equivalent.

SPN 3500 Spanish and Spanish-American Civilization. W, SS.
Credits: 4; Prereq: SPN 2200 or the equivalent.
Introduction to the peoples, institutions, and culture of the Spanish and Spanish-American World.

SPN 4420 Composition and Syntax. F, S.
Credits: 5; Prereq: SPN 3300, 3301, and SPW 3100-3102.

SPN 4780 Spanish Phonetics. F, W.
Credits: 4; Prereq: SPN 3300, 3301 and an introductory course in linguistics.

SPN 4840 Introduction to the History of the Spanish Language. S.
Credits: 4; Prereq: SPN 3300, 3301 and an introductory course in linguistics.

SPN 4850 Introduction to the Structure of Spanish. W.
Credits: 4; Prereq: SPN 3300, 3301 and an introductory course in linguistics.

SPN 4905 Individual Work.
Credits: 2 to 5; Prereq: Permission of the department.

GRADUATE COURSES

SPN 5310 Advanced Composition and Syntax.
Credits: 5

SPN 5851 The Structure of Spanish.
Credits: 4

††Grading is on a S-U basis only.

SPN 6050 Beginning Spanish for Graduate Students I.
Credits: 4††

SPN 6051 Beginning Spanish for Graduate Students II.
Credits: 4

SPN 6730 Special Study in Spanish Linguistics.
Credits: 4

SPN 6781 Advanced Spanish Phonetics.
Credits: 4

SPN 6843 History of the Spanish Language.
Credits: 4

SPN 6940 Supervised Teaching.
Credits: 1 to 5††

Spanish Literature in Translation

SPT 2231 The Modern Spanish-American Novel In English Translation. SS.
Credits: 4; Prereq: None. Not for major credit.
Readings of outstanding Spanish-American novels. Designed especially for students with little or no knowledge of Spanish who desire to study Spanish American life, character and culture as portrayed in the writings of the most important novelists.

SPT 2601 Don Quixote in English Translation. W.
Credits: 4; Prereq: None, Not for major credit.
Analysis and interpretation of Cervantes' masterpiece with particular emphasis upon place of Don Quixote in Spanish literature and in the development of the modern novel.

Spanish Literature (Writings)

SPW 3100 Introduction to Spanish Literature 1. F, S.
Credits: 3; Prereq: SPN 2200, or the equivalent.
Study of representative texts, from early Middle Ages to the *Celestina*.

SPW 3101 Introduction to Spanish Literature 2. F, W.
Credits: 3; Prereq: SPN 2200, or the equivalent.
Study of representative texts from the Renaissance through the Golden Age.

SPW 3102 Introduction to Spanish Literature 3. W, S.
Credits: 3; Prereq: SPN 2200, or the equivalent.
Study of representative texts from the Golden Age to the present day.

SPW 4130 Readings in Spanish-American Literature 1. F.
Credits: 4; Prereq: SPN 3300 and SPW 3100, 3101, 3102.
A study of selected works from the colonial period through Romanticism.

SPW 4131 Readings in Spanish-American Literature 2. W.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.
A study of selected works from Romanticism through Modernism.

SPW 4132 Readings in Spanish-American Literature 3. S.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.
A study of selected works from Vanguardism to present day.

SPW 4215 Readings in Spanish Prose Fiction of the Golden Age.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

††Grading is on a S-U basis only.

SPW 4265 Readings in Spanish Novel of the Nineteenth-Century.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

SPW 4280 Readings in Early Spanish-American Novel. SS.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

SPW 4310 Readings in Spanish Drama of the Golden Age. F.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

SPW 4315 Readings in Spanish Drama of the Nineteenth-Century.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

SPW 4335 Spanish Lyric Poetry. SS.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

SPW 4480 Readings in Contemporary Spanish Literature.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.
A study of selected works of the major writers of the last forty years, including Lorca, Cela, and Cernuda.

SPW 4604 Don Quixote. W.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

SPW 4725 Introduction to the Generation of '98.
Credits: 4; Prereq: SPN 3300, 3301 and SPW 3100, 3101, 3102.

GRADUATE COURSES

SPW 5135 Introduction to Spanish-American Literature 1.
Credits: 4

SPW 5136 Introduction to Spanish-American Literature 2.
Credits: 4

SPW 5137 Introduction to Spanish-American Literature 3.
Credits: 4

SPW 6216 Spanish Prose Fiction of the Golden Age.
Credits: 4

SPW 6237 The Spanish-American Novel from Origins to Criollismo.
Credits: 4

SPW 6245 The Picaresque Novel.
Credits: 4

SPW 6269 Spanish Novel of the 19th Century.
Credits: 4

SPW 6270 Contemporary Spanish Novel.
Credits: 4

SPW 6285 Contemporary Spanish-American Novel 1.
Credits: 4

SPW 6286 Contemporary Spanish-American Novel 2.
Credits: 4

SPW 6313 Spanish Drama of the Golden Age.
Credits: 4

SPW 6319 Spanish Drama of the 19th Century.
Credits: 4

SPW 6325 Contemporary Spanish Theater.
Credits: 4

SPW 6337 Spanish Poetry of the Golden Age.
Credits: 4

SPW 6366 The Spanish-American Essay.
Credits: 4

SPW 6400 Old Spanish Literature 1.
Credits: 4

SPW 6401 Old Spanish Literature 2.
Credits: 4

SPW 6481 Contemporary Spanish Literature.
Credits: 4

SPW 6575 The Modernist Movement.
Credits: 4

SPW 6602 Cervantes.
Credits: 4

SPW 6705 Lope De Vega and His Contemporaries.
Credits: 4

SPW 6729 The Generation of '98.
Credits: 4

SPW 6765 Argentine Literature.
Credits: 4

SPW 6806 Introduction to Graduate Study and Research.
Credits: 4

SPW 6902 Special Study in Spanish or Spanish-American Literature.
Credits: 4

SPW 6905 Individual Work.
Credits: 2 to 5

SPW 6910 Supervised Research.
Credits: 1 to 5††

SPW 6971 Master's Research.
Credits: 1 to 15††

SPW 7980 Doctoral Research.
Credits: 1 to 15††

SWAHILI**

INSTRUCTIONAL STAFF 1977-78

Der-Houssikian, H.; Kotey, P.

Swahili Language

SWA 1120 Beginning Swahili 1. F.
Credits: 5

SWA 1121 Beginning Swahili 2. W.
Credits: 5; Prereq: SWA 1120 (grade of C or better, or S) or the equivalent.

SWA 1122 Beginning Swahili 3. S.
Credits: 5; Prereq: SWA 1121 (grade of C or better, or S) or the equivalent.

SWA 3240 Spoken Swahili. W.
Credits: 4; Prereq: SWA 1122 or the equivalent.
Intensive training in the pronunciation, idiom and style of contemporary Swahili.

SWA 4850 The Structure of Swahili.
Credits: 4; Prereq: LIN 2010 or the equivalent.

Swahili Literature in Translation

SWT 3110 A Survey of Swahili Literature in Translation.
Credits: 4

FORESTRY, RANGE ECOSYSTEM MANAGEMENT, WILDLIFE ECOLOGY, RESOURCE CONSERVATION
School of Forest Resources and Conservation

INSTRUCTIONAL STAFF 1977-78

Labisky, R.F., Acting Director; Smith, W.H., Assistant Director; Arvanitis, L.G.; Blakeslee, G.M.; Ewel, K.C.; Fisher, R.F.; Forrester, D.J.; Goddard, R.E.; Gray, J.L.; Harris, L.D.; Hirth, D.H.; Hollis, C.A.; Huffman, J.B.; Hunter, D.H.; Jensen, A.S.; Marion, W.R.; Miller, J.W., Jr.; Post D.M.; Riekerk, H.; Rockwood, D.L.; Schmidt, R.A.; Seaman, W., Jr.; Shireman, J.V.; Sullivan, E.T.; White, L.D.

Forestry and Natural Resources

FNR 3011 Biological Principles of Natural Resources Management. F, S.
Credits: 3; Prereq: Completion of the equivalent of one semester each of botany and zoology or two semesters of biology, and SFRC classification or permission of the instructor.
The application of biological principles to the management of natural ecosystems for the optimization of wood fiber, wildlife, grassland, water and recreation resources. A consideration of the important biological principles which drive and restrain the natural ecosystem and the effect of man's manipulation of the factors.

FNR 3050 Introduction to Natural Ecosystems. F, S.
Credits: 6; Prereq: Completion of the equivalent of one semester each of botany and zoology or two semesters of biology, and SFRC classification or permission of the instructor.
Field introduction to natural ecosystems — their structure, pattern, diversity, function, limits, and dynamics.

FNR 3421 Quantification in Natural Resources Management. F, W.
Credits: 5; Prereq: MAC 3312, STA 3023 or equivalent.
Elementary measurement and analysis of natural resources including wood, water, forage, wildlife and recreation potential. Both parametric and non-parametric statistical techniques are stressed in lectures and laboratory exercises.

FNR 3650 Decision Making in Natural Resources Management. F.
Credits: 3; Prereq: MAC 3312, STA 3023 or equivalent.
An analysis of components in the decision process emphasizing the use of quantitative, analytical and synthesis techniques available to renewable resource managers. Principles are interfaced with computer and other modern management techniques in a deliberative framework to provide a basis for efficient resource allocation.

FNR 3905 Individual Study. F, W, S, SS.
Credits: 1 to 6; May be repeated with change of topic up to a maximum of 9 credits. Prereq: Permission of the instructor.
Individual study of a selected topic related to forest resources and conservation as contracted for with the instructor at the start of the quarter.

FNR 4612 Recreational Use of Natural Resources. F.
Credits: 3; Prereq: senior standing or approval of instructor.
Implications of the increasing use of forest and wildlands for outdoor recreation with special emphasis on the problems of mutliple-use management.

FNR 4623 Integrated Natural Resources Management. S.
Credits: 3; Prereq: FOR 3011, FOR 3650, FOR 4660.
An integrative approach to the study of forest resource management for the production of multiple products (such as timber, recreation, wildlife, rangeland, etc.) utilizing the case study approach.

FNR 4660 Natural Resources Management Policy. W.
Credits: 3; Prereq: Senior standing or consent of instructor.
Factors in evolution of forest, range, wildlife and related natural resources policies in the United States; policy components; policy formation implementation and change processes; introduction to criteria for evaluating effectiveness of policies.

FNR 4905 Individual Problems. F, W, S, SS.
Credits: 2 to 6
Investigation of a specific problem in forestry, range, wildlife ecology or forest products. The student will be assigned to a member of the staff in whose field his interest lies. May be repeated with change of content up to a maximum of 18 credits.

FNR 4931 Seminar. F, W, S.
Credits: 1; Prereq: Senior status or consent of instructor. May be repeated with change of content up to a maximum of 2 credits.
Current issues, policies, people relationships relative to forest resources conservation, use and development. Oral presentations and written reports required.

FNR 4940 Forestry, Range, and Wildlife Practicum. F, W, S, SS.
Credits: 1 to 3††; May be repeated with change of experience up to a maximum of 6 credits. Prereq: Permission of the assigned advisor.
Individual off-campus internship with selected enterprise or public agency, following a prearranged work program agreeable to both employer and advisor. FOR 4906 or similar problem course may be scheduled concurrently.

GRADUATE COURSES

FNR 5463 Simulation of Ecological Models.
Credits: 3

FNR 6608 Research Planning for Resource Decisions.
Credits: 4

FNR 6905 Research Problems in Forest Resources and Conservation.
Credits: 1 to 9; Max. 12.

FNR 6910 Supervised Research.
Credits: 1 to 5††

FNR 6922 Natural Resources Colloquium.
Credits: 1; Max. 6.

FNR 6933 Seminar.
Credits: 1††; Max. 3.

FNR 6934 Topics in Forestry, Range, Recreation and Wildlife.
Credits: 1 to 5; Max. 9.

FNR 6940 Supervised Teaching.
Credits: 1 to 5††

FNR 6971 Master's Research.
Credits: 1 to 15††

Forestry

FOR 3003 Introduction to Forestry. F, W, S, SS.
Credits: 3
Fundamentals of forestry, including history, geography, ecology, and management.

FOR 3120 Dendrology. F, S.
Credits: 4; Prereq: BOT 2021C or consent of instructor.
Characteristics of the major tree families, genera and major forest types of North America. Includes studies in systematic botany, use of botanical keys, and lab and field identification of woody species.

FOR 3123 Range Plants. F.
Credits: 4; Prereq: BOT 1020C or BOT 2021C.
Identification of range grasses, forbs, and shrubs; their distribution and habitat requirements, growth characteristics, economic importance, successional status, and response to utilization and management.

FOR 3140 Wood Structure, Properties and Use. W.
Credits: 4; Prereq: BOT 2021C or equivalent.
An introduction to the structure, identification, properties and use of important commercial woods of the United States.

FOR 3333 Fundamentals of Forest Pathology. S.
Credits: 3
Study of major diseases of forest trees with emphasis on recognition, etiology, disease ecology, and control. Should be taken by forestry majors concurrently with Forest Insects — ENY 3541.

FOR 3430 Forest Resources Measurement. W.
Credits: 5
Forest resources inventory techniques; forest sampling designs; tree and stand yield estimation; appropriate aerial photogrammetric applications.

FOR 3462 Introduction to Forest Surveying. F, S.
Credits: 5; Prereq: MAC 1132.
Classroom and field training in forest surveying as related to boundaries, drainage and forest roads; surveying principles required for mensuration and forest management.

FOR 3710 Forest Products Utilization. F.
Credits: 3; Prereq: FOR 3140.
Descriptions of the wide array of products derived from forests; origin and nature of raw materials; technologies and manufacturing processes.

FOR 4030 Basic Woodland Management. W, SS.
Credits: 4; Non-credit for forestry majors.
Principles and practices of forestry pertinent to the management of farm forest lands.

FOR 4151 Range Ecology. W.
Credits: 5; Prereq: FOR 3123 or approval of instructor.
Interrelationships within and between components of range ecosystems with emphasis on energy production and consumption and ecological concepts pertaining to management.

FOR 4162 Foundations of Silviculture. F.
Credits: 5; Prereq: FOR 3050, FOR 3011, FOR 3421, SOS 3022C.
Biological aspects of tree growth; site as a factor in tree growth; silvicultural systems; modern silvicultural practices; regional silviculture.

FOR 4212 Forest Fire Control and Use. W.
Credits: 3
Techniques of protecting forests from fire; forest fuels and factors affecting their inflammability; controlled fire in land use management.

FOR 4436 Range Inventory and Analysis. S.
Credits: 4; Prereq: FOR 4151, FOR 3421 or approval of instructor.
Utilization of quantitative techniques for sampling range ecosystems and analysis of data for specific range management objectives. Frequent use of computer-aided tools is expected.

FOR 4541 Forest Economics. F.
Credits: 4; Prereq: ECO 2013 and either ECO 2023 or AEB 3103.
The economics of forestry and the forest-product industries. Supply and demand from the viewpoint of the firm. The factors of production in forestry. The application of economic principles to specific problems of forestry.

††Grading is on a S-U basis only.

FRUIT CROPS

FOR 4621 Principles of Forest Management. W.
Credits: 3; Prereq: FOR 3430 or approval of instructor.
Principles of forest management, forest organization, management plans, sub-division of forest areas, forest regulation, cutting cycles, normal forest.

FOR 4624 Range Ecosystem Management. F.
Credits: 5; Prereq: FOR 4151 or approval of instructor.
Principles of managing range ecosystems for their sustained or increased benefits to mankind, including livestock forage, wildlife, water, productive soils, outdoor recreation, and environmental quality.

FOR 4733 Logging and Milling Practice. S.
Credits: 5; Prereq: Approval of instructor.
Care, use, and maintenance of logging and milling tools and equipment; logging and small sawmill operations.

FOR 4753 Forest Operations. F.
Credits: 4
An introduction to various operations associated with maintaining, protecting, and managing forest and their interactions with silvicultural systems and environmental factors.

GRADUATE COURSES

Structured courses may be offered in alternate years.

FOR 5640 Range Ecosystem Planning.
Credits: 5

FOR 6167 Silviculture.
Credits: 4

FOR 6170 Tropical Forestry.
Credits: 4

FOR 6310 Forest Genetics.
Credits: 4

FOR 6337 Forest Pathology.
Credits: 5

FOR 6340 Physiology of Forest Trees.
Credits: 3

FOR 6453 Forest Mensuration.
Credits: 4

FOR 6543 Economic Analysis of Forest Operations.
Credits: 4

FOR 6625 Forest Watershed Management.
Credits: 3

FOR 6742 Wood Preservation.
Credits: 4

FOR 6746 Wood Science.
Credits: 4

Wildlife Science

WIS 3401 Fundamentals of Wildlife Ecology. S.
Credits: 3; Prereq: BSC 2012C or consent of instructor.
Wildlife as a natural resource, with emphasis on principles of conservation, ecology, and management.

WIS 4220 Introduction to Fishery Science. W.
Credits: 4. Prereq: ZOO 3303C, ZOO 3803C, STA 3023, PCB 3033C.
Fishery problems in sport, commercial, culture, exotic and ecological systems. Field and laboratory techniques to describe population size and distribution, production, growth, feeding, movement, and reproduction. Management of freshwater and marine fishery resources.

WIS 4443 Wetlands Wildlife Resources. W.
Credits: 5; Prereq: WIS 3401 or approval of instructor.
Principles and problems associated with the conservation and management of wildlife in wetlands environments, with special emphasis on multiple-use management strategies of wetlands resources.

WIS 4541 Terrestrial Wildlife Resources. S.
Credits: 5; Prereq: WIS 3401.
Principles and problems associated with the conservation and management of wildlife in terrestrial environments, from urban areas to wilderness, with emphasis on the ecological relationships underlying management strategies.

GRADUATE COURSES

WIS 5323 Impact of Diseases on Wildlife Populations
Credits: 3

WIS 6253 Fishery Science.
Credits: 4

WIS 6452 Wildlife Ecology.
Credits: 4

WIS 6454 Behavioral Principles of Wildlife Management.
Credits: 3

WIS 6456 Wildlife Population Analysis.
Credits: 4

WIS 6524 Role of the Public in Natural Resources Management.
Credits: 3

Course Available in Other Department:
SOS 6233 Forest Soils.
Credits: 4

FRUIT CROPS
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Wiltbank, W.J., Acting Chairman; Bartholic, J.F.; Biggs, R.H.; Buchanan, D.W.; Crews, C.E.; Gerber, J.F.; Jackson, L.K.; Krezdorn, A.H.; Lyrene, P.M.; Sherman, W.B.; Sites, J.W.; Soule, J.; Young, M.J.

FRC 3212 Introduction to Citrus Culture. F, S.
Credits: 4; Prereq: BOT 1020 or consent of instructor.
History, botany, varieties, and rootstocks of citrus; soil and climatic requirements.

FRC 3212L Citrus Growing Laboratory. F, S.
Credits: 1; Prereq: BOT 1020 or equivalent.
Must be taken concurrently with FRC 3212. Practice in methods of citrus culture designed to fill the need of the general student in agriculture.

FRC 4223 Citrus Production. W.
Credits: 4; Prereq: or coreq: FRC 3212 and FRC 4411, or permission of instructor.
A study of the various practices which make up the complete Florida citrus production program. Particular attention is given to the scientific foundations of current practices.

FRC 4224L Fruit Crops Laboratory 1. W.
Credits: 2; Prereq: FRC 3212.
Diagnosis of orchard problems and the use of equipment for plant protection.

FRC 4225L Fruit Crops Laboratory 2. S.
Credits: 2: Prereq: FRC 3212.
Relation of morphological characteristics of fruit plants and chemical leaf analysis to cultural practices.

FRC 4241 Grove Operations and Management. S.
Credits: 4; Prereq: FRC 4223, or permission of instructor.
A course designed to present means of implementation of agricultural programs based upon the latest scientific findings and the changing economic trends. Attention will be given to the reponsibilities of owner and manager, and the direction and supervision of operations. Proper record maintenance will be discussed.

FRC 4244 A study of Current Citrus Research in Florida. SS.
Credits: 5; Prereq: FRC 3212.
A comprehensive survey of research being conducted in the several areas of citrus production at the Agricultural Research and Education Center at Lake Alfred. Students will be in residence at the Center for 4 weeks.

FRC 4271 Deciduous Fruit Crops. W.
Credits: 4; Prereq: PLS 2031 or equivalent.
Culture, harvesting and handling of deciduous fruit crops.

FRC 4411 Physiology of Fruit Production. W.
Credits: 5; Prereq: PLS 2031 and BOT 3503C.
Physiological principles underlying the production of fruit crops.

FRC 4612 Citrus Maturity and Packinghouse Procedure. F.
Credits: 4; Prereq: FRC 3212.
The maturity and grade factors affecting market quality of citrus fruits, the laws regulating the shipping or sale of citrus fruits, and the operation of commercial packinghouses.

FRC 4905 Special Problems in Fruit Crops. F, W, S, SS.
Credits: 1 to 3; Maximum of 9 credits with consent of instructor.
Open to Seniors on consent of instructor. (For additional courses related to Fruit Crops—See Plant Science).

FRC 4931 Undergraduate Seminar in Fruit Crops. F.
Credits: 1.
Open only to Seniors.

FRC 4949 Full Time Practical Work Experience in Fruit Crops. F, W, S, SS.
Credits: 1 to 4; S-U grade only; Prereq: Prior arrangement with adviser and approval of Department Chairman and Dean.

GRADUATE COURSES
(Offered under Horticultural Science.)

GEOGRAPHY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Cross, C.I., Acting Chairman; Antonini, G.A.; Boswell, T.D.; Dunkle, J.R.; Haddock, K.C.; Hetrick, V.R.; Lamme, A.J.; Marcus, R.B.; McCune, S.; Morgan, W.H.; Niddrie, D.L.; Paganini, L.A.; Popenoe, H.L.; Shannon, G.W.; Spurlock, C.W.

Undergraduate degree requirements:

In addition to satisfying the college requirements and the general university requirements for graduation, geography majors are required to follow one of the following courses of study.

Bachelor of Arts: GEO 3200C, 3200L, 4124C, 4100C, 4164, 4930. 1 course chosen from the 2000-level; 2 courses chosen from the following: GEO 3502, 3602, 3370, 3471, 3430, GEA 3223; 1 course chosen from the following: GEA 3210, 3223, 3464, 3300, 3410, 3504, 3554, 3600, 3624, 3753; depart-

mental electives from the 3000 and 4000 levels to a total of 45 hours in Geography.

Bachelor of Arts (with teacher certification): GEO 3200L, 3200L, 4930; GEO 4124C; 3 of the following 4: GEO 4100C, 4164, 4905; or GEA 3270, with either or 281; 1 course from the 2000 level; 2 courses from the following: GEO 3502, 3602, 3370, 3471, 3430, GEA 3223; 1 course from the following: GEA 3210, 3223, 3410, 3464, 3504, 3554, 3600, 3624, 3753; departmental electives from the 300 and 400 level to a total of 45 hours in Geography. In addition, students seeking certification must complete the required education courses satisfactorily.

Bachelor of Science: GEO 3200C, 3200L, 4201C, 4124C, 4100C, 4164, 4930; 1 course from the 2000 level; 2 of the following: GEO 3210, 3502, 3602, 3370, 3471, 3430, 3223, 3464, 3300, 3410, 3504, 3554, 3600, 3624, 3753; departmental electives to a total of 45 hours; 15 hours in a field outside Geography supporting a specialty in physical geography and approved by the undergraduate coordinator. Students intending to pursue the Bachelor of Science degree must declare their intent to do so to the undergraduate coordinator no later than the third quarter before graduation.

Bachelor of Science (with teacher certification): GEO 3200C, 4201C, 4930; 3 of the following 4: GEO 4124C, 4100C, 4164, or 4905 with either GEA 3270 or GEA 3223; 1 course from the 2000-level; 2 of the following: GEO 3502, 3602, 3370, 3471, 3430, GEA 3223; 1 of the following: GEA 3210, 3223, 3464, 3300, 3410, 3504, 3554, 3600, 3624, 3753; departmental electives to a toal of 45 hours; 15 hours in a field outside Geography supporting a specialty in physical geography and approved by the undergraduate coordinator. Students intending to pursue the Bachelor of Science degree must declare their intent to do so to the undergraduate coordinator no later than the third quarter before graduation. In addition, students seeking certification must complete the required education courses satisfactorily.

Departmental honors: In addition to satisfying the college requirements for graduation and the requirements for the degree of Bachelor of Arts or Bachelor of Science, with a major in Geography, the student wishing to graduate with departmental honors must fulfill the following requirements: Attain the grade point average required by the college for graduation with departmental honors;

Participate in at least three courses within the department for honors credit of which at least one course must be at the 3000-level and one course at the 4000-level;

Complete a senior honors thesis no later than the third week before graduation;

Present the results of the research culminating in the senior honors thesis no later than the second week before graduation;

Complete, with a grade of "A," GEO 4970 (Honors Thesis).

The student shall, in consultation with the undergraduate coordinator and his advisor, select three members of the faculty to serve as a committee to evaluate the honors thesis. Normally, these faculty will also serve as advisors in the preparation of the thesis as well.

Geography-Regional (Area)

GEA 3210 Geography of the United States and Canada.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the physical, economic and social character of the geographic regions of the United States and Canada; the significance of these countries in the economic and political affairs of the world.

GEA 3223 Historical Geography of the United States. S.
Credits: 4
A survey of the cultural geography of the American past. Characteristics of colonizations, settlement patterns, resource development and culture groups in the evolving regional pattern.

GEA 3270 Geography of Florida. W, S.
Credits: 4
The geographic conditions and human adjustments in the major regions of Florida. The natural environment, population, routes of communication, industries, resources, and strategic location in their geographical and historical aspects. Optional field trips.

GEA 3300 Geography of Middle America and the Caribbean. W.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources, geographic regions, and potentialities of Middle America and the Caribbean; the significance of this region in the economic and political affairs of the world.

GEA 3410 Geography of South America. S.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources,, geographic regions, and potentialities of South America; the significance of this region in the economic and political affairs of the world.

GEA 3464 Environment and Societies in Latin America. F.
Credits: 4
Systematically-oriented course in which selected environmental and societal topics are placed in geographical context in order to give student a broad understanding of Latin American landscape.

GEA 3504 Geography of Europe. W.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources, geographic regions and potentialities of Europe; the significance of this region in the economic and political affairs of the world.

GEA 3554 Geography of the U.S.S.R. F.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources, geographic regions, and potentialities of the U.S.S.R.; the significance of the U.S.S.R. in the economic and political affairs of the world.

GEA 3600 Geography of Africa. F.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources, geographic regions, and potentialities of Africa; the significance of this region in the economic and political affairs of the world.

GEA 3624 Geography of the Near East. S.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources, geographic regions, and potentialities of the Near East; the significance of this region in the economic and political affairs of the world.

GEA 3753 Geography of the Far East. W.
Credits: 4; Prereq: 6 hours of social sciences.
A comprehensive and systematic survey of the population, natural resources, geographic regions, and potentialities of the Far East, the significance of this region in the economic and political affairs of the world.

GEA 4684 Geography of Southern Africa. W.
Credits: 4; recommended ANT 4352.
An intensive study of the landscape, natural resources, population, historical geography and industrial development of Southern Africa.

GRADUATE COURSES

GEA 6109 Tropical Lands and Their Utilization.
Credits: 15

GEA 6179 Seminar: Developing Nations.
Credits: 4

GEA 6219 Seminar: United States and Canada.
Credits: 5

GEA 6309 Seminar: Middle America and the Caribbean.
Credits: 5

GEA 6419 Seminar: South America.
Credits: 5

GEA 6468L Resource Utilization and Conservation in Latin America.
Credits: 5

GEA 6469 Seminar: Land, Man, and Migration in Latin America.
Credits: 4

Geography-Systematic

GEO 1000 Geographic Concepts. F, W, S.
Credits: 1
Basic concepts in geography. An opportunity to discover the significance of geographic ideas applicable to living in today's world.

GEO 1010 Geography for a Changing World. F, W, S.
Credits: 4
The spatial organization of society. Emphasis is placed upon some of the better known social-geographic concepts.

GEO 2410C Social Geography. F, W, S.
Credits: 4
Introduction to geography as a social science. Various social concepts presented from a spatial perspective. Discussion and programmed case studies.

GEO 2420 Geography of World Societies. F, W, S, SS.
Credits: 4
An introduction to cultural geography with an emphasis upon the development and spatial arrangement of the major societies of the modern world.

GEO 2500 Geography of World Economies. F, W, S.
Credits: 4
A general geographic survey of the major economies of the modern world with an emphasis on the spatial analysis of economic activities.

GEO 2932 Honors: Geography. F, W, S.
Credits: 4; Prereq: Permission of Instructor.
For students electing to participate in the undergraduate honors programs.

GEO 3200 Physical Geography. F, W, S.
Credits: 4
A study of the development and distribution of landforms, climates, minerals, soils, and water resources. Interrelationships among the elements of the physical environment and regional patterns formed by these elements are analyzed against the background of man's utilization of them. Available for laboratory science credit.

GEO 3200L Physical Geography Laboratory.
Credits: 1; Prereq: Previous or concurrent enrollment in GEO 3200C.
Laboratory to accompany lectures in physical geography.

††Grading is on a S-U basis only.

GEOLOGY

GEO 3370 Conservation of Resources.
Credits: 4; Prereq: Sophomore standing or permission of instructor.
A survey of natural and human resources followed by study of wise and wasteful practices of utilization of these resources. Course satisfies resource certification for social studies teachers.

GEO 3430 Population Geography. W, S.
Credits: 4
World-wide distribution of population; the areal distribution of populations in relation to the features of the environment in selected areas; problems of adjustment; population-supporting capacity.

GEO 3471 Political Geography. W.
Credits: 4
A survey of the impact of geographical influences upon the establishment and functioning of sovereign states and dependent areas in order to give a background for the intelligent comprehension of current events.

GEO 3502 Economic Geography. F.
Credits: 4
A comparative geographical survey of major economic activities such as agriculture, forestry, fishing, mining, manufacturing, and commerce. Emphasis will be upon the study of the characteristics of distribution and the regional patterns of these activities.

GEO 3602 Urban Geography. F, W, S.
Credits: 4
An empirical and theoretical spatial analysis of the various economic, population and social facets within and between urban settlements.

GEO 4100C Maps and Graphs. W.
Credits: 5; Prereq: Junior standing or permission of instructor.
Analyses of cartographic problems with exercises in techniques of presentation. Map projections and symbols. Problems in statistical representation by graphic methods.

GEO 4124C Air Photo Interpretation. F, S.
Credits: 5; Prereq: GEO 3200C, or permission.
Principles of aerial photography; identification and interpretation of physical and cultural features; sketching and simple map-making and uses of aerial photography.

GEO 4164 Quantitative Analysis in Geography.
Credits: 5; Prereq: STA 3013, or permission of instructor.
Use of quantitative methods in geography with evaluation of statistical techniques in geographic research.

GEO 4201C Advanced Physical Geography. S.
Credits: 4; Prereq: GEO 3200C.
Analysis of environmental systems and processes. The significance of geographical factors in man-environment interactions. Problems of environmental quality in a geographic context.

GEO 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5; For undergraduates only. Prereq: 12 hours of geography and permission of instructor.
Qualified students and the instructor concerned may choose a particular topic or problem for study. May be repeated for full credit with change of content.

GEO 4930 Senior Seminar. F, S.
Credits: 1; Prereq: Senior standing; majors only.
Integration of geographic concepts for graduating seniors; provides introduction to professional geography for students entering the job market.

GEO 4938 Selected Topics in Geography.
Credits: 1 to 6

††Grading is on a S-U basis only.

GEO 4944 Internship. F, W, S, SS.
Credits: 1 to 15; Prereq: Senior standing.
Experiential learning in position with city, county, regional and state government agencies.

GEO 4970 Honors Thesis. F, W, S, SS.
Credits: 4; Prereq: Senior standing and participation in departmental honors program.
Completion of an honor thesis, meeting departmental specifications, during the quarter in which the student is enrolled.

GRADUATE COURSES

GEO 5105C Advanced Cartography.
Credits: 3

GEO 5125C Advanced Air Photo Interpretation.
Credits: 3

GEO 5145C Remote Sensing.
Credits: 3

GEO 5166C Advanced Quantitative Analysis in Geography.
Credits: 3

GEO 5437C Research Methods in Population Geography.
Credits: 4

GEO 5567 Industrial Location
Credits: 4

GEO 5605 Advanced Urban Geography.
Credits: 4

GEO 5704 Transportation Geography.
Credits: 4

GEO 5809 Geography of World Agriculture.
Credits: 5

GEO 5839 Land Tenure and Rural Settlement.
Credits: 5

GEO 5905 Individual Study.
Credits: 4

GEO 5930 Selected Topics in Geography.
Credits: 1 to 6; maximum of 16 credits.

GEO 5945C Field Course in Geography.
Credits: 3

GEO 6058 History of Geographical Thought.
Credits: 5

GEO 6118C Introduction to Geographical Research.
Credits: 5

GEO 6356 Seminar: Land and Water Utilization.
Credits: 5

GEO 6429 Seminar: Cultural Geography.
Credits: 5

GEO 6435 Seminar in Population.
Credits: 5

GEO 6509 Seminar: Economic Geography.
Credits: 4

GEO 6905 Indivldual Work.
Credits: 1 to 5

GEO 6910 Supervised Research.
Credits: 1 to 5††

GEO 6938 Selected Topics in Geography.
Credits: 1 to 6; maximum of 16 credits.

GEO 6940 Supervised Teaching.
Credits: 1 to 5††

GEO 6946 Individual Field Work.
Credits: 3

GEO 6971 Master's Research
Credits: 1 to 15††

GEO 7980 Doctoral Research.
Credits: 1 to 15††

GEOLOGY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Eades, J.L., Chairman; Blanchard, F.N.; Brooks, H.K.; Deevey, E.S., Jr.; Griffin, G.M.; Kuhnhenn, G.L.; MacFadden, B.J.; Mueller, P.A.; Nicol, D.; Pierce, R.W., Jr.; Pirkle, E.C., Jr.; Randazzo, A.F.; Shaak, G.D.; Smith, D.L.; Spangler, D.P.; Wahl, F.M.; Webb, S.D.

Undergraduate Coordinator: R. W. Pierce, Jr.

To meet the minimum requirements for a major in geology the student must obtain credit in the following core courses or their equivalents: GLY 2015-2100, GLY 4210-4200-4400, GLY 4301, GLY 4610, and GLY 4511. Credit for GLY 4750 or a summer field course in geology is recommended. Courses must also be completed in Basic Technical Writing, ENC 3343; one year of chemistry, CHM 2040-2041-2042-2043 or CHM 2045-2046-2047; one year of physics, PHY 2050-2051-2052 or PHY 2040-2041-2042 with appropriate laboratory sections. One quarter of zoology, ZOO 2013, may be substituted for one quarter of physics. A sequence of three of the following math courses is required: MAC 3311, 3312, 3313, COP 3110, and STA 3023. Specific course recommendations will depend upon the area of primary geologic interest. Students considering an undergraduate major in geology are urged to contact the undergraduate coordinator, Room B131 General Purpose Building A, as early as possible for program counseling.

To qualify for honors in geology, a student must obtain a 3.3 average in all geology work attempted. In addition, a thesis based on original research must be presented to the department of Geology along with the recommendation of the student's advisor. Approval of thesis topics must be obtained from the Chairman of the Department.

Geology

GLY 1000 Exploring the Geological Sciences. F, W, S, SS.
Credits: 4
Selected topics in the geological sciences. Designed for the student not majoring in science. May not be counted for credit toward a minimum major in Geology.

GLY 2015 Physical Geology. F, W, S, SS.
Credits: 4
Materials, structures, surface features of the earth and processes which have produced them. Related laboratory demonstrations and experiences.

GLY 2026 Geology for Engineers. F, W, S.
Credits: 4
The several fields of geology significant in the location of engineering structures and installations; the identification of common minerals and rocks; the processes of weathering and erosion; structure; surface features and geologic history interpreted from topographic and geologic maps. For engineers.

GLY 2100 Historical Geology. F, W, S, SS.
Credits: 4; Prereq: GLY 2015 or consent of instructor.
Evolution of the earth and its life. The major physical events and evolutionary changes as recorded in the geologic past. Related laboratory demonstrations and exercises.

GLY 2152 Regional Geology of the Southeast. W.
Credits: 2; Prereq: GLY 2015 or GLY 2026 and consent of instructor.
Observation and study of geologic features in the field. Course includes an eight day field trip (between quarters) to areas of geologic interest to study the stratigraphy, structure and geologic history of the southeastern United States.

GLY 4155 Geology of Florida. SS.
Credits: 4; Prereq: GLY 2015 or GLY 2026 or consent of instructor.
Principles of physical and historical geology as applied to the geology and mineral resources of Florida.

GLY 4200 Mineralogy. W.
Credits: 4; Prereq: GLY 4210.
A continuation of GLY 4210 involving a systematic study of rock-forming, geologically significant, and economically useful minerals, with emphasis upon their properties, occurrence, origin, identification and recognition.

GLY 4210 Crystallography. F.
Credits: 4; Prereq: GLY 2015 or CHM 2040 or permission of the instructor.
Introduction to principles of crystal chemistry, crystal structure types, morphological and structural crystallography, physical properties of minerals, and techniques of mineral identification.

GLY 4301 Elementary Petrology. S.
Credits: 4; Prereq: GLY 4200.
The mineralogy and texture, classification, recognition, occurrence, origin, and alteration of igneous, sedimentary, and metamorphic rocks.

GLY 4400 Structural Geology. W.
Credits: 4; Prereq: GLY 2100 or consent of instructor.
Structural features of the earth, their causes, recognition and interpretation, to include the mechanics of folding, faulting, and other deformations of the earth's crust.

GLY 4511 Principles of Stratigraphy. F.
Credits: 4; Prereq: GLY 2100.
Introduction to the concepts of biostratigraphic, lithostratigraphic, geochronologic, and chronostratigraphic units, and their proper definition, purpose, and use in stratigraphic work.

GLY 4515 Stratigraphic Analysis. W.
Credits: 4; Prereq: GLY 2100 and GLY 4511.
A course in advanced stratigraphy. Emphasis placed upon the detailed study of subsurface sampling techniques (well logs) and the presentation of stratigraphic information through Stratigraphic Maps.

GLY 4522 Paleozoic Stratigraphy. S.
Credits: 4; Prereq: GLY 2100 and GLY 4511.
A study of the Paleozoic stratigraphic history as displayed in the "type" areas of Europe and North America. Emphasis is also placed upon the local reference sections of North America and their stratigraphic record.

GLY 4610 Invertebrate Paleontology. S.
Credits: 4; Prereq: GLY 2100 or APB 2150-2151.
Characteristics and identification of important groups of invertebrate fossils and their use in the determination of the geological age of sedimentary rocks.

GLY 4700 Introduction to Geomorphology. S.
Credits: 4; Prereq: GLY 2100.
Description of the earth's major geomorphic features, their origin and evolution, and the geomorphic description and interpretation of topographic maps.

GLY 4750 Geological Field Methods. W.
Credits: 4; Prereq: 15 hours of geology courses.
Techniques used in geological field work.

GLY 4800 Economic Geology. S.
Credits: 4; Prereq: GLY 4200 and GLY 4400.
The geology of ore deposits with emphasis on origin and occurrence.

GLY 4865 Introduction to Geophysical Instruments and Field Methods. S.
Credits: 4
Field use of geophysical instruments.

GLY 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5. Maximum of 10 credits. Prereq: 15 hours of Geology and permission of Chairman of Department.
For work in addition to that offered in regular courses in physiography, mineralogy, petrology, paleontology, stratigraphy, sedimentology, and structural geology. With changes in content GLY 4905 may be elected for additional credit.

GLY 4930 Special Topics in Geology. F, W, S.
Credits: 4; Prereq: Three courses in Geology or permission of instructor.
Lecture, conferences, or laboratory sessions covering selected topics of current interest in modern geology. May be repeated with change in content up to a maximum of 12 credits.

Oceanography

OCE 4005 Introductory Oceanography. F, S.
Credits: 4
History of oceanography; distribution of Earth's land and water; nature and relief of the sea's floor; physical and chemical properties of sea water; sea ice; sound in the sea; tides, currents, and waves; marine sedimentation.

GRADUATE COURSES

Geology

GLY 5050 Development of the Geological Sciences. W.
Credits: 3

GLY 5221 Optical Crystallography. W.
Credits: 4; Prereq: GLY 4210 or permission of the instructor.

GLY 5230 Mineralogical Analysis by X-Ray Methods. S.
Credits: 4; Prereq: GLY 4210 or permission of the instructor.

GLY 5241 Geochemistry. W.
Credits: 4; Prereq: GLY 2100 and CHM 2047.

GLY 5450 Introduction to Geophysics. F.
Credits: 4; Prereq: GLY 2015 and one year of college physics or consent of instructor.

GLY 5555 Sedimentology. F.
Credits: 4; Prereq: GLY 4301.

GLY 5640 Vertebrate Paleontology. F.
Credits: 4; Prereq: ZOO 3703 or GLY 2100. 3703 or GLY 2100.

GLY 5704 Geomorphology. S.
Credits: 4; Prereq: GLY 4400.

GLY 5734 Marine Geology. S.
Credits: 4; Prereq: GLY 2100 or permission of the instructor.

GLY 5790 Geology Summer Field Camp. SS.
Credits: 12; Prereq: GLY 2015 and GLY 2100 and consent of instructor.

GLY 5820 Ground Water Geology. W.
Credits: 4

GLY 5860 Principles of Exploration Geophysics I. W.
Credits: 4; Prereq: GLY 2015 and one year of college physics or consent of instructor.

GLY 5861 Principles of Exploration Geophysics II. S.
Credits: 4; Prereq: GLY 2015 and one year of college physics or consent of instructor.

GLY 6225 Petrographic Mineralogy.
Credits: 4

GLY 6245 Analytical Geochemistry.
Credits: 4

GLY 6250 Mineralogy of Clays.
Credits: 4

GLY 6265 Isotope Geology.
Credits: 4

GLY 6341 Sedimentary Petrology.
Credits: 4

GLY 6345 Sedimentary Petrography.
Credits: 4

GLY 6351 Carbonate Sedimentology.
Credits: 4

GLY 6420 Tectonics.
Credits: 4

GLY 6530 Cenozoic Stratigraphy.
Credits: 4

GLY 6574 Fluvial, Deltaic, and Transitional Environments of Sedimentation.
Credits: 4

GLY 6575 Coastal and Estuarine Geology.
Credits: 4

GLY 6615 Advanced Invertebrate Paleontology.
Credits: 4

GLY 6620 Micropaleontology.
Credits: 4

GLY 6645 Ancient Vertebrate Faunas.
Credits: 4

GLY 6651 Seminar in Evolution.
Credits: 4

GLY 6660 Paleoecology.
Credits: 4

GLY 6705 Geomorphology of Southeastern United States.
Credits: 4

GLY 6813 Non-Metallic Geologic Materials.
Credits: 4

GLY 6829 Hydrogeology.
Credits: 4

GLY 6841 Offshore Oil, Gas, and Other Mineral Resources.
Credits: 4

GLY 6896 Seminar on Mineral Deposits and Conservation Geology.
Credits: 4

GLY 6905 Individual Work.
Credits: 1 to 5; maximum of 15 credits.

GLY 6910 Supervised Research.
Credits: 1 to 5††

GLY 6931 Seminar.
Credits: 1; maximum of 3 credits.

GLY 6932 Special Topics in Geology.
Credits: 1 to 4; maximum of 12 credits.

GLY 6940 Supervised Teaching.
Credits: 1 to 5††

††Grading is on a S-U basis only.

Descriptions

HEALTH RELATED PROFESSIONS

GLY 6971 Master's Research.
Credits: 1 to 15††

Oceanography: Geological

OCG 6276 Geological Oceanography 1.
Credits: 4

Zoology

ZOO 6126 Historical Ecology of the Pleistocene.
Credits: 4

CENTER FOR GERONTOLOGICAL STUDIES

GRADUATE COURSES

GEY 6646 Issues and Concepts in Gerontology.
Credits: 4

HEALTH AND HOSPITAL ADMINISTRATION
College of Health Related Professions

INSTRUCTION STAFF 1977-78

Champion, J.M., Chairman; Elnicki, R.A.; Kilpatrick, K.E.; Randall, J.M.

Health Care Administration
GRADUATE COURSES

HCA 6101 Perspectives in Health.
Credits: 4

HCA 6201 Financial Administration of Health and Hospital Care.
Credits: 3

HCA 6302 Hospital Organization, the Community and Patient Care.
Credits: 3

HCA 6391 Seminar in Health and Hospital Administration.
Credits: 4

HCA 6401 Introduction to Rehabilitation Facility Administration.
Credits: 2

HCA 6691 Seminar in Health and Hospital Administration.
Credits: 2

HCA 6716 Hospital Administration Research and Reports.
Credits: 2

HCA 6717 Research in Health and Hospital Administration.
Credits: 5

HCA 6801 Practicum in Health and Hospital Administration.
Credits: 2 to 7

HCA 6811 Residency in Health and Hospital Administration.
Credits: 7††

HCA 6905 Individual Work in Hospital Administration.
Credits: 2

HEALTH RELATED PROFESSIONS
College of Health Related Professions.

INSTRUCTIONAL STAFF 1977-78

Suzuki, H.K., Dean; Adams, S.S.; Britt, M.S.; Finley, M.D.; Fisher, N.P.; Gill, A.A.; McCormack, G.L.; Menks, F.A.; Scott, B.S.; Sieg, K.W.; Wagner, J.T.; West, F.E.; Winkler, R.E.; Wroe, M.C.

††Grading is on a S-U basis only.

The following courses are common to one or more areas of training in the College of Health Related Professions. See Clinical and Community Dietetics, Medical Technology (MLS), Occupational Therapy (OTH), and Physical Therapy (PHT) for additional professional courses in the respective curricula. HSC 1001 is required for clinical and community dietetics, medical technology, occupational therapy, and physical therapy. HSC 4550 is required for occupational therapy. APB 3203 is required for clinical and community dietetics, medical technology, and physical therapy. HSC 4516 and HSC 4517 are required for physical therapy and occupational therapy.

Applied Biology

APB 3203 Basic Anatomy and Physiology. F, W, S, SS.
Credits: 4; Prereq: ZOO 2010.
Open to students in the College of Health Related Professions and to others by permission of instructor. The structure and physiological function of selected human systems.

APB 4503C General Pathology. W.
Credits: 4; Prereq: HSC 4522.
The pathogenesis of human diseases and injuries. The mechanisms whereby etiologic agents affect changes resulting in signs and symptoms. Functional rehabilitative techniques are emphasized. Prerequisite for Occupational Therapy: HSC 4522.

Health Care Administration

HCA 4112 The American Health Care System. W, SS.
Credits: 3
Examination of the structure, organization and functions of the system with emphasis on the roles and impact of health care delivery institutions, health care professionals and consumers.

HCA 4511 Supervisory Skills in Health Care Administration. F, S.
Credits: 3
Examination of specific supervisory skills required of health care middle managers.

HCA 4802 Practicum. F, W, S, SS.
Credits: 6; Prereq: HCA 4112, HCA 4511 and HSC 4162, or by permission of department chairman.
Supervised practical experience with health care facility middle managers to develop and demonstrate managerial competency.

Health Education & Safety

HES 4905 Individual Study in Health Related Professions, F, W, S, SS.
Credits: 2 to 10; Prereq: Permission of Chairman of Department or Dean.
Supervised program of studies to investigate problems significant to health related professions. May be repeated with change of content up to a maximum of 16 credits.

Health Science

HSC 1001 Introduction to Health Related Professions. F, W, S.
Credits: 3
Open to all University College students. The current concept of comprehensive care of the ill and disabled. An orientation to the roles of the various health professions.

HSC 3520L Basic Anatomy and Physiology Laboratory. F.
Credits: 1
Laboratory sections to correlate with content of APB 3203.

HSC 4151 Legal and Ethical Aspects of Health Care Delivery. W, SS.
Credits: 4
Analysis of the legal and ethical constraints imposed on health care professionals by government, society and professional organizations.

HSC 4162 The Hospital and Related Organizations. F, S.
Credits: 4
Analysis of the organization and operation of health care delivery institutions with particular emphasis on the acute care hospital.

HSC 4221 Introduction to Evaluation in Health Sciences. W, SS.
Credits: 3
Examination of evaluation principles and methods with emphasis on clinical evaluation components and processes.

HSC 4390 Issues in Health Care Delivery. F, S.
Credits: 4
Analysis of selected issues in health care delivery systems and examination of the pertinent factors that influence them.

HSC 4391 Social Issues in Health Care. W, SS.
Credits: 4
Examination of pertinent social issues impacting on health care with emphasis on social attitudes, consumer rights and environmental concerns.

HSC 4516C Medical and Surgical Disorders. S.
Credits: 3 to 4; Prereq. or Coreq: HSC 4522 or APB 4500.
Medical lectures on the etiology, pathology, symptomatology and treatment of orthopedic conditions.

HSC 4517 Medical and Surgical Disorders. F.
Credits: 3 to 4; Prereq: HSC 4522.
Medical lectures on etiology, pathology, symptomatology and treatment of neurological conditions.

HSC 4522C The Nervous System. W.
Credits: 4; Prereq: OTH 4412 or PHT 3100 or permission of instructor.
Gross structure and internal configuration of the human nervous system and their relationships to function. Prerequisite not needed for Occupational Therapy.

HSC 4540C Kinesiology. W.
Credits: 2 to 4; Prereq: OTH 4412 or PHT 3100.
Biomechanics of the musculoskeletal system with analysis of human motion and evaluation of function relating to physical disability.

HSC 4550 Psychiatric Disorders. S.
Credits: 4; Prereq. or Coreq: OTH 2000 or permission of instructor.
Personality formation with emphasis on periods of tension and conflict. Intensive study of psychoses and psychoneuroses and their psychiatric management. Personality reactions to physical illness.

HSC 4573 Research Methods in Health Sciences. F, S, SS.
Credits: 4; Prereq: For Seniors only.
Introduction to basic research concepts and techniques in health sciences.

HSC 4930 Special Topics. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of Department heads or Dean.
May be repeated with change of content up to a maximum of 10 credits.

GRADUATE COURSES

HSC 6395 Perspectives in Health.
Credits: 4

HSC 6905 Individual Study in Health Related Professions.
Credits: 3 to 5. Maximum of 10 credits.

HSC 6910 Supervised Research.
Credits: 1 to 5††

HSC 6939 Special Topics. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of Department heads or Dean.

HSC 6940 Supervised Teaching.
Credits: 1 to 5††

GRADUATE COURSES

LIN 5711L Laboratory Study of Emergent Language Behavior. F, S.
Credits: 4

HISTORY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Funk, A.L., Chairman; Baringer, W.E.; Bentley, G.R.; Beyerchen, A.D.; Blakey, A.F.; Burns, A.M., III; Bushnell, D.; Chalmers, D.M.; Chang, R.T.; Colburn, D.R.; Conroy, S.S.; Cox, M.G.; Davis, R.H., Jr.; Doherty, H.J.; Entner, M.L.; Gannon, M.V.; Goslinga, C.C.; Gutfeld, A.; Hammond, E.A.; Henry, G.S.; Hoffman, G.J.; Laurent, J.K.; McAlister, L.N.; McGuiness, D.M. Macaulay, N.W., Jr.; Mahon, J.K.; Paul, H.W.; Peek, R.L.; Pleasants, J.M.; Pozzetta, G.E.; Proctor, S.; Savitt, T.L.; Schaub, J.H.; Softley, D.A.; Sommerville, C.J.; Sturgill, C.C.; Suarez, A.; Trueblood, F.; Turner, E.R.; Wilenksy, N.M.; Wilson, H.A.; Winius, G.D.; Woodruff, W.

A major consists of a minimum of 40 hours of history. Although no invariable sequence is prescribed, majors are expected to take the following: AMH 2010-2020; two courses from EUH 3140, 3144, 3202, 3203, 3205, 3206; at least 20 hours of courses at the 3000 and 4000-level; and at least two history courses outside the areas of European and United States History (i.e., Africa, Asia, and Latin America). Transfer students must take at least 20 hours of history at the University of Florida to complete a major. Prospective majors should consult one of the departmental advisers as early as possible. Candidates for Honors and High Honors are required to take HIS 3152 or HIS 4114, and complete a Senior Thesis, HIS 4970.

African History

AFH 3100 Africa to 1800. F.
Credits: 4
Ancient Africa, the expansion of Islam, savannah kingdoms, East African trading cities, maritime contacts with Europe, the slave trade.

AFH 3200 Africa Since 1800. W.
Credits: 4
The end of the slave trade and the growth of "legitimate" commerce; Islamic renewal and revolution; the European partition and the colonial era; the growth of nationalism and the re-emergence of independent Africa.

AFH 4250 Modern Africa. S.
Credits: 4
Selected topics in 19th and 20th century African development: pre-colonial conditions, colonial rule, nationalist movements and the problem of independence.

AFH 4450 Southern Africa. F.
Credits: 4
The history of Southern Africa from the pre-European era to the present.

GRADUATE COURSES

AFH 5934 Topics in African History.
Credits: 4; Maximum of 16 credits.

AFH 6934 Africa.
Credits: 5; Maximum of 15 credits.

American History

AMH 2010 United States to 1877. F, W, S, SS.
Credits: 5
A survey of the development of the U.S. from its colonial origins to the end of Reconstruction.

AMH 2020 United States Since 1877. F, W, S, SS.
Credits: 5
A survey of the emergence of modern America as an industrial and world power; the Progressive era; WWI; great depression and New Deal; WWII; and the cold war era.

AMH 3315 American Popular Culture to 1970.
Credits: 4
A survey of the interests and amusements of the common man in the United States from the camp meeting to the rock festival from the tent show to the television program.

AMH 3421 Florida to 1821. F, W, S, SS.
Credits: 3
Exploration and settlement; colonial history of Spanish and British Florida.

AMH 3422 Florida 1821 to 1900. W, S.
Credits: 3
U.S. acquisition, Seminole Wars, territory and state, Civil War, Reconstruction, Bourbons, railroads, Populists.

AMH 3423 Florida 1900-President. F, W, S, SS.
Credits: 3
The Progressive Era, the Catts Explosion, Great Florida Land Boom, Great Depression and World Wars, diversification of agriculture, tourism, urbanization, industrialization, social and intellectual developments.

AMH 3523 History of American-East Asian Relations. W.
Credits: 4
The foreign relations of the United States with China, Korea, and Japan from the late eighteenth-century to the present.

AMH 3581 Minority Group Conflicts in Historical Perspective.
Credits: 3
A course focused on the historical background of "minorities within minorities," e.g., Ulster-Ireland-Britain. To be offered periodically with area and content change.

AMH 4041 Studies in American Civilization. F.
Credits: 4
Examination of periods, themes, and movements in U.S. history, using concepts and data from the humanities and social sciences.

AMH 4110 Colonial America. F.
Credits: 4; Prereq: AMH 2010.
Description and analysis of the origins of the Anglo-North American colonies; development of colonial society, economy, culture and institutions; international rivalry for North American supremacy.

AMH 4130 American Revolutionary Era. W.
Credits: 4; Prereq: AMH 2010.
The Great War for Empire and post war adjustents, deterioration of relations between the colonies and England, 1763-75; War for Independence; government under the Articles of Confederation and the movement for constitutional revision.

AMH 4160 Jacksonian America. W.
Credits: 4
The main trends in political, economic and social history in the United States from the close of the War of 1812 through the compromise of 1850, with major emphasis on political history.

AMH 4170 Slavery and Civil War in the U.S. F.
Credits: 4; Prereq: AMH 2010.
Biracial settlement of the South, a minority within a minority; north of slavery, abolitionist crusade, sectional controversy, the War, and why the North won.

AMH 4172 Era of the American Civil War. W.
Credits: 4; Prereq: Permission of the Instructor.
A reading and discussion course with emphasis on American politics from 1850 to 1876. Topical focus on expansion and conflict; nativism; steps toward separation; military and policy aspects of the War; the conflicting goals of reconciliation and freedom; constitutional problems; the political economy of Reconstruction during the Grant era.

AMH 4220 U.S., Populist Era to World War I. F.
Credits: 4
The Populist era; Progressivism; WWI.

AMH 4231 U.S., World War I to World War II. W.
Credits: 4
Post War America; the twenties; depression and New Deal; WWII.

AMH 4270 U.S. Since WWII. S.
Credits: 4
Post War America; America as world power; social revolution, Vietnam, Watergate.

AMH 4307 U.S. Social and Intellectual to the Civil War.
Credits: 4
Colonial religious and social structure, enlightenment, revolution, constitutionalism, liberalism, emergence of a national culture, age of reform.

AMH 4309 U.S. Social and Intellectual since the Civil War.
Credits: 4
Darwinism, pragmatism, progressivism, nationalism, cultural relativism, New Deal, post WWII search for standards.

AMH 4402 The South to 1860. F.
Credits: 4
Development of Southern culture from the earliest settlements to the development of Southern nationalism.

AMH 4403 The South Since 1860. W.
Credits: 4
Impact of Civil War and Reconstruction; the economic, political and social development of the New South.

††Grading is on a S-U basis only.

Descriptions

HISTORY

AMH 4423 Selected Topics in Florida History. F, S.
Credits: 4; Maximum of 8 credits.
Directed reading from sources and in-depth examination of selected periods, making use of teaching resources and concepts from related disciplines.

AMH 4444 The Far West. 5.
Credits: 4
A history of the nineteenth-century trans-Mississippi West with special attention to the exploration, acquisition and settlement of the Great Plains. Emphasis on the Mexican War, Manifest Destiny, economic development and the impact of the white man on Indian cultures.

AMH 4460 U.S. Urban History. F.
Credits: 4
Analysis of the growth and development of urban civilization in the U.S. Emphasis on how cities began and their impact on politics, economics and culture.

AMH 4530 Immigration and Ethnicity in American History. S.
Credits: 4
A historical survey of America's minorities, including analyses of assimilation, ethnic identification, adjustments, and nativism.

AMH 4546 U.S. Military Policy in War and Peace 1. F.
Credits: 3
From European background in the eighteenth-century through the Civil War. Not drum and trumpet history, but the relationship of military institutions to the rest of U.S. history. Emphasizes the search for peace as well as war.

AMH 4547 U.S. Military Policy in War and Peace 2. W.
Credits: 3
Since 1865. Emphasizes the managerial revolution at the end of the nineteenth-century, the hypertrophy of war, and introduces modern defense and peace problems.

AMH 4572 Reconstruction and Race Relations, 1862 to the Present. W.
Credits: 4
Congressional Reconstruction and the Freedman under Lincoln, Johnson, and Grant: the legend and reality of "Racial" Republican policy towards the Negro. The Era of Segregation, 1862-1954. The Civil Rights Movement and the Second Reconstruction: black protest and the nation's response to the Negro Revolution.

AMH 4578 Problems in Afro-American History. F.
Credits: 4; Prereq: Permission of Instructor.
A reading-and-discussion course with primary focus on the question of black nationalism versus assimilation of the U.S. with concentrated attention to issues and movements and the condition of Afro-American accommodation and resistance.

AMH 4579 Colloquium, History of the Afro-American. F.
Credits: 4; Prereq: Permission of the Instructor.
A reading-and-discussion course which each year gives concentrated attention to a different aspect of black history and culture.

AMH 4935 Undergraduate Seminar in American Civilization. S.
Credits: 4
Topics and themes of the American past examined from interdisciplinary perspectives. Individual projects based on student training and interest will be emphasized.

GRADUATE COURSES

AMH 5905 Special Studies. F, W, S, SS.
Credits: 4

AMH 5930 Topics in U.S. History.
Credits: 4; Maximum of 16 credits.

AMH 6117 Colonial America.
Credits: 5

AMH 6149 United States, Early National.
Credits: 5

AMH 6169 United States, The Middle Period.
Credits: 5

AMH 6179 United States, Division and Reunion.
Credits: 5

AMH 6201 The Emergence of Modern America.
Credits: 5

AMH 6239 America Between the Wars.
Credits: 5

AMH 6279 America Since 1945.
Credits: 5

AMH 6379 The United States in the World Economy, 1783-1960.
Credits: 5

AMH 6393 Seminar in American Thought.
Credits: 5; Maximum of 15 credits.

AMH 6498 Seminar in Urban-Ethnic History.
Credits: 5; Maximum of 10 credits.

AMH 6549 Seminar in the History of American Military Policy.
Credits: 5; Maximum of 10 credits.

Asian History

ASH 3301 East Asian Civilizations to 1800, I. F.
Credits: 4
The historical and cultural development of China to 1800.

ASH 3302 East Asian Civilizations to 1800, II. S.
Credits: 4
The historical and cultural development of Korea and Japan to 1800.

ASH 3303 East Asian Civilization Since 1800. W.
Credits: 4
The historical development of China and Korea under the impact of the West since 1800.

ASH 3521 India to 1857. S.
Credits: 4
Background of traditional Hindu and Muslim institutions, European commercial initiative and political involvement, British achievement of paramount power in India.

ASH 3550 India Since 1857. F.
Credits: 3
British imperial rule, the freedom movement, the interests of minorities and partition of the subcontinent, independent India.

ASH 4441 Japan to 1800. F.
Credits: 4
Yamato Japan, adoption of Chinese institutions, the rise and evolution of Japanese feudalism, Japan's first contact with the West, establishment of the Bakuhan structure.

ASH 4442 Japan Since 1800.
Credits: 4
Decline of Tokugawa feudalism the Meiji restoration, the growth of Japan as a nation-state.

GRADUATE COURSES

ASH 5388 Topics in East Asian History.
Credits: 4; Maximum of 16 credits.

ASH 6904 Readings in Japanese History.
Credits: 5; May be repeated with change of content of a maximum of 15.

Economic Systems and Development

ECS 4334 Economic and Social History of Modern Russia and the Soviet Union.
Credits: 4

European History

EUH 2000 Western Civilization: From Early Times Through the Middle Ages. F, W, S.
Credits: 3
An introduction to western civilization *primarily designed for non-majors.* Coverage of the early cultures in Mesopotamia and Egypt, the Minoan-Mycenean society, Greece, the Hellenistic period, Rome, the barbarian invasions, and the Middle Ages.

EUH 2001 Western Civilization: From the Renaissance to the Eighteenth-Century. F, W, S, SS.
Credits: 3
A continuation of EUH 2000 *primarily designed for non-majors.* Highlights the Renaissance and Reformation, the Thirty Years War, the Age of Louis XIV, mercantilism, and the Enlightment.

EUH 2002 Western Civilization From the Eighteenth Century to the Present. F, W, S, SS.
Credits: 3
A continuation of EUH 2001 *primarily designed for non-majors.* Highlights the eighteenth-century revolutions, Napoleon, Age of Metternich, revoltuions of 1848, unification of Germany and Italy, imperialism, the two world wars, communism, fascism, and the postwar era to present.

EUH 3101 The Ancient Near East, from Earliest Times to 500 B.C. F.
Credits: 4
Beginnings of western civilization. Emphasis on Egypt, Mesopotamia, and the peoples of the Old Testament.

EUH 3121 Early Middle Ages. F.
Credits: 4
The western world from the dissolution of the Roman Empire in the West to the birth of the German Holy Roman Empire.

EUH 3122 The High Middle Ages. W.
Credits: 4
The western world from the inception of Germany through the Twelfth-Century Renaissance to the height of medieval civilization.

EUH 3123 Later Middle Ages. S.
Credits: 4
The waning and decline of the Middle Ages of the western world from its height to the voyages of discovery.

EUH 3140 Renaissance. F.
Credits: 4
Interpretations of the Renaissance. Italy: culture and politics. The northern Renaissance and Christian Humanism.

EUH 3144 Reformation. W.
Credits: 4
Medieval background. The Protestant, Radical, and Catholic Reformations of the sixteenth-century. Impact on European society.

EUH 3202 Europe, 1660 to 1763. W.
Credits: 4
An introductory course on European politics, society, ideas, and institutions from the age of Louis XIV to the dissolution of the French Colonial empire.

EUH 3203, 1763 to 1848. F.
Credits: 4
An introductory course of European politics, society, ideas, and institutions from the Enlightenment to the triumph of the bourgeoisie.

EUH 3205 Europe, 1848 to 1914. W.
Credits: 4
An introductory course of European politics, society, ideas, and institutions from the revolution of 1848 to the outbreak of World War I.

EUH 3206 Europe Since 1914. S.
Credits: 4
An introductory course on European politics, society, ideas, and institutions from World War I to the present.

EUH 3401 The Greek World to 200 B.C. W.
Credits: 4
Greek foundations of western civilization from Minoans and Mycenaeans to Alexander the Great. Emphasis on classical Greek history, especially the fifth-century.

EUH 3412 The Roman World. S.
Credits: 4
Romans and their contribution to western civilization. Covers the traditions of the Roman Republic, the Carthaginian Wars, and the Imperial period.

EUH 3500 Medieval England. F.
Credits: 4
The creation of a national society and culture, in the time of England's constitutional development (to the sixteenth-century).

EUH 3501 Early Modern England. W.
Credits: 4
The development of a revolutionary tradition and of a parliamentary monarchy, in the period of England's cultural flowering (sixteenth to eighteenth-centuries).

EUH 3502 Modern Britain. S.
Credits: 4
Social, political, and economic developments in the time of Britain's greatest world dominance.

EUH 3571 Russia to 1801. F.
Credits: 4
A survey of the history of the Russian State. Emphasis is on institutional, political, and economic history.

EUH 3572 Russia, 1801-1917. W.
Credits: 4
Emphasis is on internal political, economic, and social history, the impact of modernization and the rise of radical ideologies.

EUH 3573 Soviet Union. S.
Credits: 4
A survey of Soviet history. Emphasis is on internal politics and institutions, and on the development of the Soviet economy.

EUH 4092 Childhood and Youth in Western Civilization. S.
Credits: 4
A history of attitudes toward children, of efforts to use, help, and understand them, and of the ideological importance of the child, and what these show about our civilization, since the Greeks.

EUH 4100 Ancient Babylonia from the Sumerians to the Parthians.
Credits: 4
A cultural survey of the major historical periods in Ancient Mesopotamia focusing on the indigenous Sumerians, Babylonians, and Assyrians and the instrusive Persians, Greeks, Romans, and Parthians using the latest information in archaeological, linguistic, and historical research.

EUH 4223 Age of Discovery: The Dutch, the English and the French, 1500-1763. S.
Credits: 4
Emergence of the Dutch, English and French, in the context of their position in European affairs.

EUH 4244 Background of World War II.
Credits: 4
The first World War, the Treaty of Versailles, diplomacy between the wars, analysis of events leading to World War II.

EUH 4280 History of the Second World War. W.
Credits: 4
An analysis of the Second World War covering especially politics, resistance movements, and strategy. Although all theaters are covered, the emphasis is on Europe.

EUH 4313 Age of Discovery: The Portuguese and Spanish, 1415-1763. W.
Credits: 4
European emergence from medieval isolation to global civilization. Emphasizes ancient world background, Arab trading system, Iberian discovery and empire.

EUH 4314 Spain and Portugal, Fifteenth-Seventeenth Centuries. F.
Credits: 4
History of Spain and Portugal from the close of Middle Ages, emphasizing research tools and bibl. materials. Spanish dominance and decline.

EUH 4315 Spain and Portugal, Since 1700.
Credits: 4
Spanish and Portuguese quest for modernity.

EUH 4404 Ancient Greece.
Credits: 4
Selected topics from the Archaic period, the Golden Age (Fifth-Century), and the Hellenistic era. Use will be made of various types of source materials, literary, archeological, numismatic, and the like, in illuminating the area of historical inquiry.

EUH 4414 Ancient Rome.
Credits: 4
Selected topics from the period of the Republic and from the Empire.

EUH 4451 France in the Twentieth Century.
Credits: 4

EUH 4463 Germany in the Nineteenth Century. F.
Credits: 4
From the Prussian reform movement through the personal reign of Wilhelm II, with emphasis on the creation of the German Empire.

EUH 4464 Germany in the Twentieth Century. W.
Credits: 4
From the origins of World War I to divided Germany after World War II. Emphasis on the Weimar Republic and the Nazi era.

EUH 4511 Elizabethan England, 1509-1660. F.
Credits: 4
Cultural, social and constitutional developments in the time of the emergence of political and religious consciousness.

EUH 4513 Restoration England, 1660-1793.
Credits: 4
Cultural, economic, and political developments in the era of England's industrial, imperial, and diplomatic dominance.

EUH 4601 Intellectual History of Europe, Enlightenment to Romanticism. F.
Credits: 4
Development of scientific and religious ideas in context of social conditions of knowledge. Emphasis on Scientific Revolution, Cartesianism, Baconianism, Enlightenment, Romanticism.

EUH 4603 Intellectual History of Europe from Positivism to Structuralism. W.
Credits: 4
Impact of Marxism, Darwinism. Changing nature of scientific knowledge. Attention given to ideology, sociology of knowledge. Mid-Nineteenth through Twentieth Century.

EUH 4610 European Social History, 1358-1750.
Credits: 4
Social structure, social change, and revolt in western and southern Europe from the Black Death to the Industrial Revolution. Offered alternate years.

EUH 4611 European Social History, 1750-Present.
Credits: 4; Offered alternate years.
Social change and revolution in western Europe from the Industrial Revolution to contemporary society.

EUH 4640 Economic History of Europe to A.D. 1350. F.
Credits: 4
Agrarian Europe from Neolithic times, the medieval and early modern European village community.

EUH 4641 Economic History of Europe, 1350-1700. W.
Credits: 4
The rise of towns, development of commerce, history of business organization, medieval and early modern European demographic history.

EUH 4650 European Military History to 1783. F.
Credits: 4; Offered alternate years.
The founding and growth of the state controlled military establishment, and the exercise of the military art, and military policies treated in connection with relevant political, and economic factors.

EUH 4651 European Military History Since 1783. S.
Credits: 4; Offered alternate years.
A continuation of EUH 4651.

GRADUATE COURSES

EUH 5546 Topics in British History.
Credits: 4; Maximum of 16 credits.

EUH 5934 Topics in European History.
Credits: 4; Maximum of 16 credits.

EUH 6126 The Middle Ages.
Credits: 5; Maximum of 15 credits.

EUH 6213 Europe, 1500-1763.
Credits: 5

EUH 6226 European Expansion.
Credits: 5

EUH 6289 Readings, Modern Europe.
Credits: 5; Maximum of 15 credits.

EUH 6298 Seminar in the History of Modern European Thought.
Credits: 5; Maximum of 15 credits.

EUH 6320 Eastern Europe.
Credits: 5

EUH 6339 Central Europe.
Credits: 5

EUH 6342 Western Europe Since 1763.
Credits: 5

EUH 6508 England.
Credits: 5; Maximum of 15 credits.

Health Education and Safety

HES 4100 Topics in the History of Medicine.
Credits: 4
Beginning with primitive societies, the course will trace the development of ideas of medical treatment, concepts of disease, and the growth of medical knowledge over the centuries. Students will also have the opportunity to perform research on an aspect of medical history of interest to them.

Descriptions

HES 4103 Topics in American Medical History.
Credits: 4
A topical approach to the origins and special problems of the healing professions in America. Emphasis is on social history rather than on technological developments. Topics may vary each time the course is offered. Student may report course when topics change.

History: General

HIS 3152 An Introduction to Historical Thinking. S.
Credits: 4
Introduction to the methodological and philosophical bases of historical analysis, with students developing individual projects relating to a major historiographic problem.
Qualifies as credit for High Honors and for Departmental Honors.

HIS 3481 History of Modern Science: Newton to Darwin. F.
Credits: 4
Historical survey of science, scientists and their institutions from the late seventeenth to late nineteenth centuries. Attention given to relationship between science and government, religion and philosophy.

HIS 3482 History of Modern Science: 1890-present. W.
Credits: 4
Continuation of HIS 3481.

HIS 3483 The Atomic Age. S.
Credits: 4
History of the changing perception of the political and social significance of science since the discovery of nuclear fission.

HIS 4114 The Nature of History. W.
Credits: 4
An introduction to the philosophy of history, including analysis of interpretations of the historical process, criticism of classical theories of history, and consideration of recent theories on historical explanation. Qualifies as credit for High Honors and for Departmental Honors.

HIS 4470 History of Technology I.
Credits: 4
This course examines the development of technology and engineering from antiquity to the Industrial Revolution. Emphasis will be on the relationship of the development of technology to the growth of western civilization.

HIS 4471 History of Technology II.
Credits: 4
This course examines the development of technology and engineering from the beginning of the Industrial Revolution to the early twentieth-century. Emphasis will be on the relationship of the development of technology to the cultural growth of western civilization.

HIS 4472 History of Technology III.
Credits: 4
This course investigates the development of technology and engineering in North America from about 1700 to the early twentieth century. It is concerned primarily with the influence of the growth of technology on the developing pattern of life in the United States.

HIS 4905 Special Studies. F, W, S, SS.
Credits: 1 to 5
May be repeated with change of content up to a maximum of 12 credits.

HIS 4930 Population Problems in Historical Perspective. S.
Credits: 4
Introduction to historical demography from neolithic times to the modern era in Europe and selected other geographical areas.

HIS 4970 Senior Thesis. F, W, S, SS.
Credits: 3; Prereq: Senior standing and permission of the department. May be repeated with approval of department.
Directed research leading to the submission of an original thesis. Required for candidates for High Honors and for Departmental Honors.

GRADUATE COURSES

HIS 6060 Theories and Methods 1.
Credits: 5

HIS 6061 Theories and Methods 2. F.
Credits: 5

HIS 6063 Introduction to Quantitative History.
Credits: 5

HIS 6148 Historians and American Society.
Credits: 5; Maximum of 10 credits.

HIS 6905 Individual Study.
Credits: 5; Maximum of 20 credits.

HIS 6910 Supervised Research.
Credits: 1 to 5††

HIS 6940 Supervised Teaching.
Credits: 1 to 5††

HIS 6971 Master's Research.
Credits: 1-15††

HIS 7289 Comparative History.
Credits: 5; Maximum of 15 credits.

HIS 7980 Doctoral Research.
Credits: 1 to 15††

Latin American History

LAH 3130 Colonial Latin America.
Credits: 4
A survey of the formation of Spanish and Portuguese imperial systems and colonial societies in America in the sixteenth, seventeenth, and eighteenth centuries.

LAH 3201 The Emmergence of Modern Latin America.
Credits: 4
A survey of Spanish and Portuguese imperial crises in the eighteenth century, and the independence movement and the formation of the Latin American nations in the nineteenth century.

LAH 3300 Twentieth Century Latin America.
Credits: 4
A survey of contemporary challenges to traditional orders in Latin America, adaptations to existing structures, and revolutionary change.

LAH 3301 Current Latin American Events.
Credits: 3; Prereq: ability to understand Spanish.
Events as reported in contemporary Spanish-language sources. Offered in cooperation with the Foreign Language Department.

LAH 3712 The Inter-American System. S.
Credits: 4
Diplomatic and other relations between the United States and Latin America, with emphasis on the development of an organized inter-American system.

LAH 4433 Modern Mexico. W.
Credits: 4
Aftermath of independence and war with U.S. the Reforma and Maximilian, Porfiriate, Mexican Revolution and Contemporary trends.

LAH 4471 Caribbean, the Old Colonial System.
Credits: 4
Comparison of the colonial regimes in the West Indies and Central America to 1821 (c), international rivalry, slavery and the slave trade.

LAH 4472 Caribbean, Nineteenth and Twentieth Centuries.
Credits: 4
Development of the West Indies and Central America with emphasis on the decline of colonial rule and on economic and social evolution.

LAH 4510 Platine Republics. F.
Credits: 4
Argentina, Paraguay, and Uruguay since independence, briefer examination of colonial antecedents. Argentina as a case-study of abortive political and economic take-off.

LAH 4520 Gran Colombian Nations. S.
Credits: 4
Comparative study of political institutions, dynamics, economic development of Colombia, Venezuela, Ecuador, primarily since independence.

LAH 4620 Brazil to 1822. F.
Credits: 4
Foundations of Portuguese civilization in Brazil, sugar planters, bandeirantes, miners, ranchers and slaves. Political, social and economic developments from 1500 to 1822.

LAH 4630 Brazil Since 1822. S.
Credits: 4
Monarchy, wars, slavery, the military question, the Republic, coffee, industrialization, twentieth century ideologies.

LAH 4722 Problems in the Social History of Latin America (I). W.
Credits: 4
An examination of the historical roots of select contemporary issues, as found in colonial and early national class and race relations, population movements, and patterns of external dependency. To be presented with use of films and literary materials as well as conventional historical readings.

LAH 4723 Problems in the Social History of Latin America (II). F.
Credits: 4
The later development, mainly in the present century, of issues considered in LAH 4722, together with new forces making for change. Special attention to modern social revolutionary movements. Procedures same as in LAH 4722.

LAH 4732 Cultural History of Latin America. F.
Credits: 4
A survey of the development of colonial art and architecture in the American hemisphere during the sixteenth and first half of the thirteenth centuries.

LAH 4733 Cultural History of Latin America.
Credits: 4
A continuation of LAH 4732, covering the latter half of the seventeenth and eighteenth centuries.

GRADUATE COURSES

LAH 5934 Topics in Latin American History.
Credits: 4; Maximum of 16 credits.

LAH 6938 Seminar in Latin American History.
Credits: 5; May be repeated.

Social Sciences: Interdisciplinary

SSI 4601 Masterpieces in Social Sciences 1. F.
Credits: 4
For advanced students with background in the social sciences and approval of major adviser and course chairman. Readings from classics in economics, history, political science, sociology and culture anthropology.

††Grading is on a S-U basis only.

SSI 4602 Masterpieces in Social Sciences 2. W.
Credits: 4
For advanced students with background in the social sciences and approval of major adviser and course chairman. A continuation of SSI 4601 studying a different set of classics.

SSI 4603 Masterpieces in Social Sciences 3. S.
Credits: 4
For advanced students with background in the social sciences and approval of major adviser and course chairman. A continuation of SSI 4602, studying a different set of classics.

WORLD HISTORY

WOH 4220 World Encounter: An Analysis of Global Historical Trends since 1500. W.
Credits: 4
To inter-relate the major factors which in the last 400 years have influenced the formation of today's power structure.

HORTICULTURAL SCIENCE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Carpenter, W.J., Chairman; (Faculty listed under Fruit Crops, Ornamental Horticulture, and Vegetable Crops).

Fruit Crops

GRADUATE COURSES

FRC 6233 Citriculture.
Credits: 5

FRC 6243 Citrus Production Management.
Credits: 5

FRC 6251 Tropical Fruits.
Credits: 4

FRC 6252 Tropical Beverage, Nut and Spice Crops.
Credits: 4

FRC 6256 Tropical Fruit Production and Research in Florida.
Credits: 5

Horticulture Science

GRADUATE COURSES

HOS 6112 Morophology of Horticultural Crops.
Credits: 5

HOS 6122 Taxonomy of Horticultural Crops.
Credits: 5

HOS 6201 Perennial Horticultural Crop Breeding.
Credits: 5

HOS 6212 Herbaceous Horticultural Crop Breeding.
Credits: 3

HOS 6231 Biochemical Genetics of Higher Plants.
Credits: 4

HOS 6311 Seed Physiology.
Credits: 5

HOS 6331 Postharvest Physiology.
Credits: 5

HOS 6351 Chemical Regulators of Horticultural Crops.
Credits: 4

HOS 6361 Rootstock-Scion Relationships.
Credits: 5

HOS 6412 Nutrition of Horticultural Crops.
Credits: 5

HOS 6611C Agricultural Meteorology.
Credits: 5

HOS 6631 Environmental Measurements.
Credits: 3

HOS 6905 Nonthesis Research in Horticultural Science.
Credits: 1 to 5; Max. 5.

HOS 6910 Supervised Research.
Credits: 1 to 5††

HOS 6931 Horticultural Science Seminar.
Credits: 1††; Maximum 4.

HOS 6932 Topics.
Credits: 2 to 5; Max. 10.

HOS 6940 Supervised Teaching.
Credits: 1 to 5††

HOS 6941 Practicum in Horticultural Science.
Credits: 2 to 5; Max. 10.

HOS 6971 Master's Research.
Credits: 1 to 5††

HOS 7980 Doctoral Research.
Credits: 1 to 15††

Ornamental Horticulture

GRADUATE COURSES

ORH 6223 Research and Development in Turfgrass Science.
Credits: 4

VEC 6251 Advanced Olericulture.
Credits: 5

HUMANITIES

INSTRUCTIONAL STAFF 1977-78

McKnight, S.A., Chairman; Altizer, A.; Bigelow, G.; Carnell, C.; Carson, R.; Derrick, C.; Funk, A.L.; Goldhurst, W.; Goslinga, C.; Haring, E.; Hartigan, K.V.; Hetrick, L.; Hodges, J.R.; Isenberg, S.R.; Jaberg, R.L.; Johnson, I.; Kniseley, S.P.; Kotey, P.A.; Lambert, R.E.; Langford, A.G.; Lewis, A.L.; Malvern, M.M.; Murray, E.D.; Neale, J.R.; Price, J.W.; Rolf, R.; Sunwall, J.R.; Sussman, L.; Taylor, F.H.G.; Ulmer, G.; Wear, R.A.

The General Education Humanities requirement may be met by taking any courses designated HUM.

The Humanities courses are intended to increase the student's understanding of himself and his world through an examination of the nature of humanity and its values, as accepted in various societies throughout recorded history, and revealed in their arts and reflective writings.

The Humanities courses interrelate outstanding examples of introspective and creative achievements, from primary sources where feasible, examining such themes as the nature of reality, rationality and nonrationality, good and evil, freedom and bondage, the good life.

The fundamental series, HUM 2210-2230-2250 and HUM 2229-2239-2259 (honors), are developmentally organized, and use examples from Western culture, typically including works by Homer, the Greek playwrights (Aeschylus, Sophocles, Euripides), Plato, the Pentateuch, Matthew, Dante, Machiavelli, Michelangelo, Shakespeare, Spinoza, Rembrandt, Voltaire, Bach, Mozart, Beethoven, Goethe, Dostoevsky, Debussy, Le Corbusier, Freud, Picasso, Stravinsky, Sartre, et al.

In addition to the foregoing sequence, the Department offers both introductory and advanced courses in Western Humanities including HUM 2190, 2930, 3220, 3251, 3431, 3473, and 3930.

Courses are also offered in Non-Western Humanities, including HUM 2420 and 3420 African Humanities and HUM 2410 Asian Humanities.

HUM 2010 Elementary Humanities
Credits: Maximum of 9
Credit by CLEP examination only. This credit represents attainment of only that minimum knowledge of the subject designated by passing level mandated by state interinstitutional agreement. It is available to those not wishing to avail themselves of the usual University of Florida general education course work in the subject. Students who obtain CLEP credits must do so before enrolling in the University of Florida General Education courses.

HUM 2020 Humanities Forum.
Credits: 4
A general introduction to western humanities emphasizing the formation of values and the development of self-images as expressed in the arts, literature, and philosophy of the major historical epochs. Strongly recommended as a first course for students desiring a general overview or for those needing a single humanities course to complete the general humanities requirement.

HUM 2210 Western Humanities: Ancient to Medieval. F, W, SS.
Credits: 4
The first course in the sequence HUM 2210-2230-2250. Selections from the Greco-Roman and Judeo-Christian heritages, and the Medieval period.

HUM 2229 Western Humanities: College Honors. F.
Credits: 4, Prereq: Enrollment in College Honors.
The first course in the sequence HUM 2229-2239-2259. Similar to HUM 2210 but structured to the abilities of qualified students.

HUM 2230 Western Humanities: Renaissance to 19th Century. W, S.
Credits: 4
The second course in the sequence HUM 2210-2230-2250. Selections from the Renaissance to the late 19th Century.

HUM 2239 Western Humanities: College Honors. W.
Credits: 4; Prereq: Enrollment in College Honors.
The second course in the sequence HUM 2229-2239-2259. Similar to HUM 2230 but structured to the abilities of qualified students.

HUM 2250 Western Humanities: Modern. S, SS.
Credits: 4
The Third course in the sequence HUM 2210-2230-2250. Selections from the late 19th and 20th Centuries.

HUM 2259 Western Humanities: College Honors. S.
Credits: 4; Prereq: Enrollment in College Honors.
The third course in the sequence HUM 2229-2239-2259. Similar to HUM 2250 but structured to the abilities of qualified students.

HUM 2410 Asian Humanities. F, W, S.
Credits: 5
A general education course similar in philosophy and purpose to HUM 2210-2230-2250. Content selected from the philosophies, literature, arts and music of India, China, Japan. May be used either as an elective or as a requirement in the area of the Humanities.

††Grading is on a S-U basis only.

HUM 2420 African Humanities. F, W, S.
Credits: 5
A general education course similar in philosophy and purpose to HUM 2210-2230-2250. Content selected from various African countries and regions. May be used either as an elective or as a requirement in the area of the Humanities.

HUM 2930 Special Topics. F, W, S, SS.
Credits: 4; May be repeated, with change of content.
Multi-disciplinary general education courses on topics to be announced prior to each registration. May be used as an elective or as a requirement in the area of Humanities.

HUM 3220 Hellenistic Culture and the Judeo-Christian Tradition. W, S.
Credits: 4; Prerequisite: HUM 2210 or an Introductory Course in Ancient Religion, Philosophy and Classics.
A study of the amalgam which emerged in the Hellenistic world during the three centuries following Alexander the Great. Special attention will be given to the cultural responses of the Jewish people and to the lasting effects on Hebrew and Christian tradition.

HUM 3251 Humanities Interpretations of the Twentieth Century. F, S.
Credits: 4
An examination of methods of interpreting the art forms and events of contemporary western culture, including modes drawn from the arts, literature, philosophy and the human sciences.

HUM 3421 Advanced African Humanities. S.
Credits: 4; Prerequisite: HUM 2420 or AFS 2002.
Focuses on traditional and modern forms of religious and philosophical beliefs, Literature, Art, architecture and music of Africa.

HUM 3431 The Glory That Was Greece. F.
Credits: 4
An examination of the total culture of ancient Greece, including the literature, philosophy, religion, art, and architecture. The goal of the course is to offer the student an opportunity to make an in-depth study of this vital culture which lies at the beginning of our Western heritage.

HUM 3473 The Age of the Avante-Garde. F, S.
Credits: 4
An examination of the revolutionary, experimentalist aspects of modern and contemporary culture, including such early movements as Cubism and Surrealism, as well as current movements such as Structuralism and Conceptualism, considered in an interdisciplinary context. Representative materials will be selected from the fields of the visual arts, literature, philosophy, and music.

HUM 3930 Special Topics. F, W, S, SS.
Credits: 4; May be repeated, with change in content.
Multi-disciplinary general education courses on topics to be announced prior to each registration. May be used either as an elective or as a requirement in the area of the Humanities.

Interdisciplinary Studies

IDS 2190 Ascent of Man. F, SS.
Credits: 4
The course uses Jacob Bronowski's celebrated video lectures *The Ascent of Man* and selected readings to explore the mind of man, the great turning points in every age, and man's evolving fulfillment of his human potential.

INDUSTRIAL AND SYSTEMS ENGINEERING
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Thomas, M.E., Chairman; Ariet, M.; Burns, J.F.; Capehart, B.L.; Dominiak, K.E.; Francis, R.L.; Hearn, D.W.; Hodgson, T.J.; Kalman, R.E.; Kilpatrick, K.E.; Leavenworth, R.S.; Lowe, T.J.; Mahoney, J.F.; Martinson, E.P. (emeritus); Muth, E.J.; Nattress, J.A.; Ratliff, H.D.; Sivazlian, B.D.; Swain, R.W.; Valisalo, P.E.; Wilcox, D.B. (emeritus).

Engineering: Computer Mathematics

ECM 6260 Numerical Techniques for Linear Systems.
Credits: 3

Engineering: Industrial

EIN 3114 Computer Programming for Engineers. F, W, S, SS.
Credits: 3; Prereq: MAC 3312.
Computer programming and the uses for large scale digital computers. Emphasis will be placed on the scientific oriented computer language FORTRAN. Engineering and technical problems are solved by each student using the facilities of the Computer Center. This course is specifically directed toward those students who are pursuing technical careers in fields employing a reasonably high degree of mathematics.

EIN 3304 Industrial and Service Process. W.
Credits: 3
Overview of process and operations in manufacturing and service industries. Industrial and Systems Engineering applications are developed within the context of selected industries.

EIN 3314L Work Design. F, S.
Credits: 3; Prereq: STA 4321.
The analysis, design and maintenance of work methods. Principles, techniques and procedures for determination and audit of time standards. The study of synthetic time systems and work sampling. Consideration of factors affecting successful implementation and maintenance of a methods engineering program. Laboratory.

EIN 3373 Job Evaluation. W.
Credits: 2; Prereq: EIN 3314L.
Analysis of factors affecting job value. Analysis of several systems for determining the relative worth of jobs. Wage plan development, wage surveys, group and individual incentives, and merit rating. Consideration of factors affecting successful implementation and maintenance of a wage administration program.

EIN 4105 Specifications, Contracts, Ethics, and Industrial Safety. W.
Credits: 3; Prereq: Upper Division classification.
Contracts and contracting procedures and documents; specifications; professionals ethics and responsibilities; legal obligations of employers and safety techniques.

EIN 4212 Accident Prevention Engineering. W.
Credits: 3; Prereq: Upper Division classification.
Workmen's Compensation provisions. Safety standards, procedures and equipment. Organization and conduct of employee safety training.

EIN 4243 Human Engineering. W, SS.
Credits: 3; Prereq: Upper Division classification, STA 4321, STA 4322.
Design, analysis, and evaluation of man-machine systems. Emphasis on interaction of human and non-human components and resultant effect upon total system performance. Discussion of man's physical, mental and psychological characteristics and limitations.

EIN 4333 Production Control Systems. F. S.
Credits: 3; Prereq: EIN 3314, EIN 4354, ESI 4313, STA 4322.
Analysis of production systems, forecasting, methods of control, material flow systems, scheduling, sequencing, lot size scheduling, project management.

EIN 4335 Production Systems Analysis and Design. F, S.
Credits: 3; Prereq: EIN 4365.
Total production systems design. Integration of production subsystems design with concentration on methods of successful implementation. A project and case study oriented course. Laboratory.

EIN 4344 Inventory Systems. F, S.
Credits: 3; Prereq: ESI 4313.
Deterministic and probabilistic inventory models for single-item and multi-item systems. Application of dynamic programming. Inventory processes analyzed as stochastic processes. Concept of optimal policy. Constrained inventory systems. Analysis of distribution systems.

EIN 4354 Engineering Economy. F, W, S, SS.
Credits: 3; Prereq: Upper Division classification.
Basic principles and applications of economic decision-making between alternatives encountered in engineering systems projects. The analysis will include methodologies of economics, accounting and finance in addition to engineering fundamentals.

EIN 4355 Economic Decision Models. W.
Credits: 3; Prereq: EIN 4354 and ESI 4312.
Fundamental principles of engineering evaluation and decision making under conditions of uncertainty, risk, and assumed certainty. Included are the Laplace principle, Hurwicz criterion, Savage regret, and minimum-variance expectation principles. Problems of data collection and analysis are discussed. System production functions are studied.

EIN 4365 Facilities Planning. W.
Credits: 3; Prereq: ESI 4312, ESI 4313, ESI 4523.
Principles, methods, and techniques for analyzing existing and designing proposed plant facilities. The problems involved in and the interrelationships of plant location, product analysis, process design, equipment selection, materials handling, plant arrangement and supplementary services.

EIN 4905 Special Problems in Industrial and Systems Engineering. F, W, S, SS.
Credits: 1 to 6
Problems and systems studies associated with honors programs representing undergraduate research. Selected advanced topics including new developments and techniques in industrial and systems engineering. May be repeated up to a maximum of 12 credits.

EIN 4937 Industrial and Systems Engineering Seminar. F, W, S.
Credits: 1; Prereq: ESI 4313.
Lectures and discussions on general and specific engineering problems. Individual investigations and research reports on assigned topics. Orientation for an industrial career.

EIN 4944 Practical Work in Industrial and Systems Engineering. F, W, S, SS.
Credits: 1 to 5; Prereq: 4EG classification; one term industrial employment, including extra work according to a preapproved outline.
Practical engineering work under industrial supervision as set forth in the College of Engineering Regulations.

GRADUATE COURSES

EIN 5244 Measurements in Bioengineering.
Credits: 3

EIN 6115 Information Systems.
Credits: 3

EIN 6246L Human Factors Engineering.
Credits: 3

EIN 6247 Man-Machine Systems Design.
Credits: 3

EIN 6249 Behavior Systems Engineering.
Credits: 3

EIN 6318 Work Measurement Theory.
Credits: 3

EIN 6338 Advanced Production Control.
Credits: 3

EIN 6348 Mathematical Theory of Inventory.
Credits: 3

EIN 6357 Advanced Engineering Economy.
Credits: 3

EIN 6358 Decision Theory.
Credits: 3

EIN 6367 Facilities Systems Design.
Credits: 3

EIN 6388 Statistical Forecasting Models.
Credits: 3

EIN 6508 Health Systems Analysis 1.
Credits: 4

EIN 6509 Health Systems Analysis 2.
Credits: 4

EIN 6905 Special Problems.
Credits: 1 to 9

EIN 6910 Supervised Research.
Credits: 1 to 5††

EIN 6918 Graduate Seminar.
Credits: 1††

EIN 6939 Seminar in Applied Stochastic Processes.
Credits: 3

EIN 6940 Supervised Teaching.
Credits: 1 to 5††

EIN 6971 Master's Research.
Credits: 1 to 15††

EIN 7933 Special Problems.
Credits: 1 to 9

EIN 7980 Doctoral Research.
Credits: 1 to 15††

Engineering Systems-Industrial

ESI 3123 Analog Computer Principles. F, W, S, SS.
Credits: 2; Prereq: MAP 3302.
Basic principles and uses of analog computer. Consideration of solution of simultaneous algebraic and differential equations as well as elementary simulation techniques. Laboratory.

ESI 3154 Process Control Computer Programming. W.
Credits: 1
Basic principles and uses of process control digital computers. Consideration of basic machine language analog-to-digital and digital-to-analog conversions and process control. Laboratory.

ESI 3305 Introduction to Industrial and Systems Engineering. F, S.
Credits: 3; Prereq: EIN 3114 and MAC 3314.
Introduction to the philosophy and methodology of operations research. Problem formulation and mathematical modeling of problems encountered in industrial and systems engineering.

ESI 3305L Introduction to Industrial, Systems Engineering Laboratory.
Credits: 1; Coreq: ESI 3305.
This course is designed to be a companion to ESI 3305 — Introduction to Industrial and Systems Engineering. Various computer programs, physical models and demonstrations will be used to amplify the concepts and techniques discussed in ESI 3305.

ESI 3502 Numerical Techniques. F, W, S, SS.
Credits: 2; Prereq: EIN 3114. Coreq: MAP 3302.
Major techniques for solving problems quantitatively through the use of computers and computer programming languages. Numerical and computer solutions to elementary systems of algebraic equations and ordinary differential equations.

ESI 4221 Industrial Quality Control. F, S.
Credits: 3; Prereq: STA 4321.
Factors affecting product quality are identified and analyzed as they affect variations in and levels of quality performance. The concept of control of quality is introduced. Techniques of controls are studied including control charts and statistical sampling for process and lot conformance. The measurement of the significance of control factors is studied.

ESI 4235 Methods of Reliability Engineering. S.
Credits: 3; Prereq: STA 4321.
Role and activities of reliability engineering. Models for equipment failure. Reliability function and hazard function. Typical failure distribution. Reliability of redundant systems. Models of repair and maintenance.

ESI 4312 Operations Research 1. F, W.
Credits: 3; Prereq: ESI 3305 and ESI 4567.
Classical optimization; method of Lagrange multipliers, Kuhn-Tucker conditions; research techniques; convex programming; linear programming; sensitivity analysis; transportation and assignment algorithms.

ESI 4313 Operations Research 2. W, S.
Credits: 3; Prereq: ESI 4312, ESI 4568; STA 4321.
Branch and Bound methodology; dynamic programming; queueing theory; Markov chains; network analysis.

ESI 4523 Industrial Systems Simulations. F, S.
Credits: 3; Prereq: ESI 3502, STA 4321.
Simulation methodology, languages and design. Monte Carlo technique, GPSS (General Purpose Simulation System), and Industrial Dynamics applied to the solution of industrial problems.

ESI 4545 Stochastic Systems. W.
Credits: 3; Prereq: EIN 4354 and STA 4322.
Development and application of probability models in the output analysis of production systems. Applications of probability theory to systems design for reliability, safety, and effectiveness. Formulation of system behavior as a stochastic process.

ESI 4554 Systems Design. W, S.
Credits: 3; Prereq: ESI 3123 and ESI 3502. Coreq: ESI 4313.
The design of complex integrated systems using principles of operations research and systems analysis. A design laboratory gives the student experience in modeling and computer simulation of system design configurations and prototype experimentation.

ESI 4560 Numerical Techniques in Systems Engineering. F, S.
Credits: 3; Prereq: EIN 3114 and ESI 4567.
A study of numerical techniques suitable for computer solution of problems involving interpolation, zero-finding, matrix operations, eigenvalues, eigenvectors, differentiation, integration, relaxation and differential equations, error analysis.

ESI 4567 Matrix Methods in Systems Engineering. F, W, SS.
Credits: 3; Prereq: MAC 3314
Theory and application of vector spaces and matrices to systems problems. Analysis of linear transformations, simultaneous linear equations, characteristic values, and quadratic forms. Convex sets, n-dimensional geometry, and an introduction to system theory.

ESI 4568 Transform Methods in Systems Engineering. F, W, S.
Credits: 3; Prereq: MAP 3302.
Solutions of differential, integral and difference equations arising in systems engineering and operations research problems using Laplace and Z-transform methods. Operational approaches will be stressed.

ESI 4569 Dimensional Methods in Systems Engineering. S.
Credits: 2; Prereq: ESI 4567 or equivalent or consent of instructor.
A utilization of dimensional methods to include: systems of units, the notion of homogeneity, calculational methods, simplification of boundary and initial value problems, similarity.

ESI 4949 Co-Op Work Experience. F, W, S, SS.
Credits: 1 to 5
Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

GRADUATE COURSES

ESI 5125 Analog Simulation Techniques. F, S.
Credits: 3

ESI 5135 Hybrid Computer Techniques. W.
Credits: 3

ESI 5236 Reliability Engineering. S.
Credits: 3

ESI 5307 Operations Analysis 1. SS.
Credits: 3

ESI 5308 Operation Analysis 2. SS.
Credits: 3

ESI 5309 Operations Research: A Survey of Techniques and Applications. W.
Credits: 4

ESI 5570 Digital Computer Techniques 1. F, S.
Credits: 3

ESI 5571 Digital Computer Techniques 2. W.
Credits: 3

ESI 6127 Analog Computer Techniques.
Credits: 3

ESI 6136 Analog-Hybrid Systems.
Credits: 3

ESI 6137 Advance Hybrid Computer Techniques.
Credits: 3

ESI 6222 Statistical Quality Control.
Credits: 3

ESI 6239 Reliability Theory.
Credits: 3

ESI 6316 Mathematical Methods of Operations Research 1.
Credits: 3

ESI 6317 Mathematical Methods of Operations Research 2.
Credits: 3

ESI 6337 Queueing Theory.
Credits: 3

††Grading is on a S-U basis only.

ESI 6349 Markov Decision Processes for Engineers.
Credits: 3

ESI 6358 Games and Gaming.
Credits: 3

ESI 6408 Introduction to Optimization Theory.
Credits: 3

ESI 6417 Linear Programming.
Credits: 3

ESI 6418 Extensions of Linear Programming.
Credits: 3

ESI 6429 Nonlinear Programming.
Credits: 3

ESI 6438 Dynamic Programming.
Credits: 3

ESI 6439 Dynamic Optimization Theory.
Credits: 3

ESI 6448 Discrete Optimization Theory.
Credits: 3

ESI 6458 Flows in Networks.
Credits: 3

ESI 6499 Advanced Topics in Mathematical Programming.
Credits: 1 to 4

ESI 6508 Systems Analysis 1.
Credits: 3

ESI 6509 Systems Analysis 2.
Credits: 3

ESI 6526 Industrial Dynamics 1.
Credits: 3

ESI 6527 Industrial Dynamics 2.
Credits: 3

ESI 6528 Dynamic Modeling and Simulation.
Credits: 3

ESI 6529 Digital Simulation Techniques.
Credits: 3

ESI 6546 Stochastic Systems Analysis 1.
Credits: 3

ESI 6547 Stochastic Systems Analysis 2.
Credits: 3

ESI 6548 Stochastic Service Systems.
Credits: 3

ESI 6558 Advanced Systems Design.
Credits: 3

Statistics

STA 4603 Operation Research: A Survey of Technology and Applications. W.
Credits: 4
Fundamental survey of operations research techniques with emphasis on practical applications. Topics covered include linear programming, dynamic programming, networks and flow graphs, queues, and Markov chains. (Not available to ISE students).

INTERIOR DESIGN
College of Architecture

INSTRUCTIONAL STAFF 1977-78

McFarlane, J., Director; Tate, S.; Young, M.

IND 3100 History 1. W.
Credits: 4
Historic interior styles to the end of the 16th century, with emphasis on their cultural settings.

IND 3130 History 2. S.
Credits: 4
Historic interior styles from the beginning of the 17th century to 1930, with emphasis on their continuing cultural settings.

IND 3215 Interior Design 1. F.
Credits: 5; Prereq: ARC 2313.
The study of design elements real and abstract involved in the solution of interior space.

IND 3216 Interior Design 2. W.
Credits: 5; Prereq: IND 3215.
Continuation of Interior Design 1.

IND 3217 Interior Design 3. S.
Credits: 5; Prereq: IND 3216.
Continuation of Interior Design 2.

IND 3311 Interior Architectural Drawing. F.
Credits: 4; Prereq: ARC 1126.
Advanced Interior Design 2 and 3 dimensional drawing.

IND 3420 Interior Furnishings 1. F.
Credits: 4; Coreq: IND 3215.
The study of the relationships of materials and furnishing in the design of interior space.

IND 3421 Interior Furnishings 2. W.
Credits: 4; Prereq: IND 3420.
Continuation of Interior Furnishings 1.

IND 3422 Textiles. S.
Credits: 4
Studies of textiles, selection, maintenance, fabrication. Emphasis on natural and synthetic fibers used in drapery, upholstery, and wall covering fabrics and floor coverings.

IND 3430 Interior Furnishings 3. S.
Credits: 4; Prereq: IND 3421.
Continuation of Interior Furnishings 2.

IND 4222 Advanced Interior Design 1. F, SS.
Credits: 8; Prereq: IND 3217.
Design problems involving commercial, institutional and public areas.

IND 4223 Advanced Interior Design 2. F, W.
Credits: 8; Prereq: IND 4222.
Continuation of Advanced Interior Design 1.

IND 4226 Advanced Interior Design 3. W, S.
Credits: 8; Prereq: IND 4223.
Terminal project involving all the principles of design studies in previous courses.

IND 4240 Interior Design for Architects. W, SS.
Credits: 5; Prereq: ARC 4322.
Advanced problems in the design of commercial and institutional interiors.

IND 4451C Applied Design Connections. F.
Credits: 4; Prereq: ARC 3462.
Application of the architectural design process to the assemblage and detailing of a small-scale building.

IND 4500 Practice of Interior Design. W.
Credits: 4; Prereq: IND 4222.
Administration of interior design operations; estimating, professional relations, legal forms, specifications and supervision.

JOURNALISM
College of Journalism and Communications

INSTRUCTIONAL STAFF 1977-78

Griffith, J.L., Chairman; Bush, T.J.; Chance, J.C.; Davis, H.G.; Griggs, H.H.; Jones, J.P.; Kent, K.E.; Martin, D.F.; Parrish, F.F.; Pierce, R.N.; Roosenraad, J.A.; Scott, L.E.; Smith, J.A.; Weston, E.G.; Yates, E.D.

Offerings in journalism are designed primarily for training professional journalists in newspaper and magazine reporting, writing, editing and interpretation. Students interested in major work in print journalism are referred to the requirements of the College of Journalism and Communications, which offers reporting, editing and photojournalism sequences within its Journalism Department. Students also are referred to College course offerings in Broadcasting, Advertising, Public Relations and Technical Communications. College of Journalism and Communications courses may be taken for elective credit by students in all Upper Division units of the University.

Journalism

JOU 3100 Reporting I. F, W, S, SS.
Credits: 4; Prereq: MMC 2100 with at least a C, ability to type 20 words a minute.
Instruction and practice in news gathering and writing of basic news stories, with special attention given to news format and the execution of reporting assignments.

JOU 3101 Reporting II. F, W, S.
Credits: 4; Prereq: JOUR 3110, JOU 3100, with at least a C.
Instruction and practice in solving complex news problems, with opportunities to cover continuing stories, to background the news, and to handle diverse news assignments simultaneously. Emphasis on enterprise, documentation and use of multiple sources in presenting the significance of events.

JOU 3110 Fact Finding. F, W, S.
Credits: 3
Locating and interpreting basic sources used in reporting and editing news. Students will work with standard reference works and public records, practice interviewing skills, learn to analyze and interpret charts, reports and statistics commonly used by news media, and study survey research as used in reporting.

JOU 3204 Graphics of Journalism. S.
Credits: 3; Prereq: Junior standing or above in the College of Journalism & Communications or permission of instructor.
Introduction to the use of photographs, type, drawings, graphs and charts.

JOU 3601 Journalistic Photography. F, W, S, SS.
Credits: 4; Prereq: Junior standing or above in the College of Journalism & Communications or permission of instructor.
Practice and study in reportorial still photography, including darkroom techniques; visualization; selection and use of photographs for the print media; legal, historical, stylistic and ethical aspects of journalistic still photography. Students must furnish supplies.

JOU 4004 History of Journalism. W, S.
Credits: 4
Origin, development and potentiality of printed media, with emphasis on the daily and weekly press. Analysis will be made of the evolution of standards, policies, methods and controls.

JOU 4104 Public Affairs Reporting. F, W, S, SS.
Credits: 4; Prereq: JOU 3110, JOU 3100, JOU 3101 with at least a C.
Instruction and practice in reporting public affairs, with special emphasis upon responsible news coverage of city, county and state government.

JOU 4200 Newspaper Editing I. F, W, S.SS.
Credits: 4; Prereq: JOU 3110, JOU 3100.
Fundamental instruction and practice in essentials of news editing, with special emphasis on editing the weekly and daily newspaper. Included are copyreading, headline writing, makeup and typography.

JOU 4202 Newspaper Editing II. S.
Credits: 4; Prereq: JOU 4200, PUR 4103.
Career newspaper editing; emphasis on creativity in editing, layout and design, color, decision making, news selection and judgment, technology and production, and publication trends.

JOU 4300 Magazine and Feature Writing. F, W, S, SS.
Credits: 4; Prereq: JOU 3100 or permission of the instructor.
Preparation of articles for publication in newspapers and magazines coordinated with study of magazine-editing problems. Supervised marketing of articles produced in the course.

JOU 4301 Specialized Journalism. F, S.
Credits: 4; Prereq: JOU 3100, JOU 3101 with at least a C, Senior standing.
Study and practice in advanced journalism including reviewing. Students may select a specialty and may work in writing or in writing and photography together.

JOU 4302 Public Opinion and Editorial Writing. F, W, S, SS.
Credits: 4; Prereq: Senior standing.
Public opinion as a force in government and daily life; introduction to persuasive writing as a practical means of influencing public opinion.

JOU 4602 Advanced Reportorial Photography. S.
Credits: 5; Prereq: JOU 3601 or permission of the instructor.
with reportorial emphasis; black and white and color; trends, managerial aspects and social implications. Students must furnish supplies.

JOU 4700 Problems and Ethics of Journalism in Society.
Credits: 4; Prereq: Senior standing in journalism.
Reading, analysis and planning in current and projected issues in journalism, both in their professional and societal aspects.

JOU 4800 Journalism in Secondary Schools. F, SS.
Credits: 5; Prereq: Senior standing; Coreq: MMC 2100.
Open only to students seeking certification. This course is designed for persons who plan to teach journalism in secondary schools, or who act as faculty advisers for school newspapers, magazines or yearbooks.

JOU 4905 Individual Problems in Journalism.
Credits: 1 to 5; Prereq: At least 15 hours of Journalism in the Upper Division and approval of the Dean.
Students and the instructor concerned will choose a problem or project which will give the student actual experience in his major field.

JOU 4930 Special Study in Journalism.
Credits: 1 to 5; Prereq: Senior standing in Journalism and permission of instructor.
Variable content, providing opportunity for study in academic areas of Journalism such as the Literature of Journalism, and other fields within the province of the College. (May be repeated once for a total of 6 quarter hours).

JOU 4946 Applied Journalism. F, W, S, SS.
Credits: 5; Prereq: JOU 4104 and JOU 4200.
A Senior course bringing together the work of the preceding news courses into actual experience and newsroom training in the preparation and handling of news copy, pictures and syndicated materials.

JOU 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5††; Prereq: At least 15 hours of professional courses must have been completed. Must have academic adviser, department and Dean's approval to receive credit.
Student and instructor concerned will select an appropriate work area related to the field of journalism or an appropriate communications area where the students may gain work experience and/or on-the-job training. (May be repeated for a total of 10 hours. Content must be changed).

Mass Media Communication

MMC 1000 Survey of Mass Communication. F, W, S.
Credits: 3
An introduction to the various media of mass communication, with special emphasis on the roles and responsibilities to society and the publics they serve.

MMC 2100 Writing for Mass Communication. F, W, S, SS.
Credits: 3; Prereq: Nine hours of English; Sophomore standing or above; ability to type 20 words a minute.
A preprofessional course designed to provide fundamental instruction and practice in writing as a basis for Upper Division courses.

MMC 4200 Law of Mass Communication. F, W, S, SS.
Credits: 4; Prereq: Senior standing.
Understanding the law which guarantees and protects the privileges and defines the responsibilities of the mass media. Includes problems of constitutional law, libel, privacy and governmental regulations.

MMC 4301 World Communication Systems. W.
Credits: 4
Theoretical bases of world mass media systems; international channels of communications, analysis of press and broadcasting systems by regional and national categories.

MMC 4420 Applied Research in Mass Communication. F.
Credits: 3
Research applications for print and public relations organizations. Role of research in decision making. Evaluation of surveys and experiments.

GRADUATE COURSES

With permission of the instructor and the College, an undergraduate may enroll in graduate-level courses if the student has Senior standing and an Upper Division grade-point average of at least 2.8. Such courses are listed under "Communication" in this catalog and are described under "Journalism and Communications" in the graduate school catalog. Students interested in graduate work are referred to course offerings under Communication.

LANDSCAPE ARCHITECTURE
College of Architecture

INSTRUCTIONAL STAFF 1977-78

Smith, H.H., Program Director; Sanderson, J.A.; Donelin, D.

LAA 2710 Landscape Architecture 1. F, S.
Credits: 4
Esthetic and economic theory of landscape design, from antiquity through the 18th century.

LAA 2711 Landscape Architecture 2. W.
Credits: 4
19th and 20th century landscape architecture with emphasis on the bionomic relationships of natural and created landscape.

LAA 3330C Site Analysis. F.
Credits: 4; Coreq: LAA 3350L.
Survey and development of building sites.

LAA 3350L Landscape Architectural Design 1. F.
Credits: 5; Prereq: ARC 2313C.
Program organization, generation of exterior spaces, horizontal circulation; site studies based on individual and group functions.

LAA 3351L Landscape Architectural Design 2. W.
Credits: 5; Prereq: LAA 3350L.
Continuation of LAA 3350L with increasing emphasis on horizontal circulation, textural and scale relationships.

LAA 3352L Landscape Architectural Design 3. S.
Credits: 5; Prereq: LAA 3351L.
Continuation of LAA 3351L with emphasis on roadway alignment, parkway and roadside development; site studies based on large group functions.

LAA 3420 Landscape Construction 1. F.
Credits: 4; Coreq: LAA 3350L.
Characteristics of land form and the effects of grading on drainage, soils and location of landscape architectural elements.

LAA 3421 Landscape Construction 2. W.
Credits: 4; Prereq: LAA 3420.
Design of non-habitable structures, pavings, trails, low retaining walls and irrigation system layouts.

LAA 3510 Planting Design. S.
Credits: 5; Prereq: LAA 3351L.
Plant materials as major design elements and the execution of planting plans; specifications and cost estimates.

LAA 3530 Grounds Maintenance. S.
Credits: 4; Prereq: ORH 3514C.
Survey of landscape maintenance problems with emphasis on institutional and public areas.

LAA 4210 Professional Administration. F.
Credits: 5; Prereq: Senior standing.
The preparation of cost estimates and specifications based on different project types, programming of landscape development. Office administration, contracts, professional ethics.

LAA 4355L Advanced Landscape Architectural Design. 1. F, SS.
Credits: 8; Prereq: LAA 3351L and LAA 3510.
Large scale and planning projects with emphasis on team and collaborative processes.

LAA 4356L Advanced Landscape Architectural Design 2. F, W.
Credits: 8; Prereq: LAA 4355L.
Continuation of Advanced Landscape Architectural Design 1.

LAA 4357L Advanced Landscape Architectural Design 3. W. S.
Credits: 8
A terminal comprehensive project based on the principles of previous studies. Additional sketch problems may be given.

LAA 4830 Recreation Planning. W, SS.
Credits: 4; Prereq: LAA 3351L.
Problems in urban, state and regional recreational planning and development.

LAA 4905 Special Studies in Landscape Architecture. W, S, SS.
Credits: 4; Prereq: Senior standing in landscape architecture or architecture, or graduate standing in Planning, or consent of instructor.
Studio investigations of special topics in landscape architecture adjusted to individual needs of advanced undergraduate and graduate students. Students may repeat for a maximum of 8 credits.

LAA 4930 Senior Seminar. W, S.
Credits: 3; Prereq: Senior standing.
Reports, project present, visiting lecturers.

††Grading is on a S-U basis only.

LATIN AMERICAN STUDIES
College of Arts and Sciences

THE LATIN AMERICAN FACULTY

Schulman, J.A., Director; Antonini, G.A.; McCoy, T.L.; Trueblood, F.M.; Suarez, A.; Soares, G.

In addition to the six faculty members listed above, the Latin American Faculty consists of 60 members from 12 departments, who teach 192 courses with Latin America content available to undergraduates in the Latin American Studies Program.

The Center for Latin American Studies offers a Certificate in Latin America Studies, based upon a special curriculum and a departmental major leading to the degree of Bachelor of Arts or Bachelor of Science in the College of Arts and Sciences, the College of Education, the College of Journalism and Communications and the College of Business Administration.

For a description of the Undergraduate Programs in Latin American Studies see CENTER FOR LATIN AMERICAN STUDIES and STUDY ABROAD. Also consult the course offerings of the various departments in this catalog, the Graduate School Catalog, and the *Bulletin* published by the Center for Latin American Studies. Copies of the *Bulletin* may be obtained at 319 Linton E. Grinter Hall.

UNDERGRADUATE COURSES

LAS 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5; For Undergraduates only.
Qualified students may choose a topic which focuses on the Latin America area but which cuts across disciplines. Prior consent is needed from instructor involved. May be repeated with change of content up to a maximum of 15 credits.

LAS 4935 Latin American Area Seminar. F, W, S, SS.
Credits: 5; Prereq: Latin American area concentration.
A multidisciplinary approach to Latin American topics. Required of all candidates for B.A./B.S. certificate in Latin American Studies. May be repeated with change of content up to a maximum of 15 credits.

GRADUATE COURSES

LAS 6905 Individual Work. F, W, S, SS.
Credits: 1 to 5

LAS 6938 Latin American Area Seminar. F, W.
Credits: 5; Maximum of 15 credits.

LAS 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15††

Law

GRADUATE COURSES

LAW 6285 Latin American Legal Institutions Seminar. S.
Credits: 2

LAW 6286 Latin American Trade and Investment Seminar. W, SS.
Credits: 2

LAW 6935 Law Seminar Preparation. F, W.
Credits: 1

LINGUISTICS
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Casagrande, J., Director; Burns, A.F.; Byrd, H.P.; Chu, C.C.; Conner, J.W.; Der-Houssikian, H.; Dew, D.; Gellinek, C.J.; Hammond, R.M.; Harder, J.C.; Hardman, M.J.; Hollien, H.; Jensen, P.J.; Kotey, P.A.; McCarthy, K.M.; Markel, N.N.; Miller, D.G.; Scholes, R.J.; Scott, J.; Simon, T.W.; Su, S.Y-W.; Sullivan, W.J.; Thompson, R.M.

††Grading is on a S-U basis only.

Linguistics is an interdepartmental program which offers an individual interdisciplinary major for undergraduate students and graduate degrees at the M.S. and Ph.D. levels, as described in the Graduate Catalog.

Students interested in careers in linguistics are advised to take the undergraduate bachelor's degree in one of the related disciplines. (For guidance contact the Director: Jean Casagrande, 162 GRI, Tel. # 392-0639) or the interdisciplinary major.

The individual interdisciplinary major consists of 48 quarter hours of courses in linguistics distributed as follows:

a. Required courses: LIN 2010, LIN 3611, LIN 3700, and LIN 4905 (seminar).

b. Fixed-choice Requirements: Student selects at least one course from each category.

1. Structure: ENG 3551, FRE 4850, RUS 4300, SPN 4860, SWA 4850.

2. Phonetics and Phonology: LIN 3221, FRE 4783, POR 4770, SPN 4780.

3. Behavior: LIN 3711, LIN 4711.

c. At least 20 quarter hours from list of approved electives.

A student who wishes to major in Linguistics should consult the Undergraduate Coordinator: W.J. Sullivan, 433 GRI, TEL. #2-2107.

The Program in Linguistics administers the English Language Institute, which offers an intensive noncredit program in English for speakers of other languages, described elsewhere in the catalog.

English: General

ENG 6571 American Social Dialects.
Credits: 4

Linguistics

LIN 2000 Language and Man. F, S.
Credits: 4
The nature of human language, its origins, and its relationship to thinking and behavior.

LIN 2010 Introduction to Linguistics. F, W, S, SS.
Credits: 4
Survey of the main areas of the discipline, covering such topics as phonetics, phonology, syntax, morphology, semantics, dialects, linguistic change, linguistic diversity, writing, neurolinguistics and computational linguistics.

LIN 3221 The Sounds of Human Language. F.
Credits: 3
Study of sounds, their patterning, and function in languages of the world.

LIN 3340 Traditional Grammars. W.
Credits: 4
Review and evaluation of the principles of traditional grammar as reflected in the works of the best grammarians. Illustrations in several languages. Comparison of varieties of grammatical models used to describe these languages. Evaluation of degree to which a grammar developed essentially for Latin describes other languages, particularly non-Indoeuropean languages. Practice and evaluation of different models of parsing.

LIN 3371 Studies in Non-Western Languages. F, W,
Credits: 2 to 5; Prereq: Permission of the department.
Basic language instruction in non-Western language such as Arabic, Aymara, Ga, Shona, or Yoruba.

LIN 3611 Languages and Dialects. S.
Credits: 4
An introduction to the defining characteristics and varieties of human natural languages and dialects. Presentations include: a model of the nature of language, a survey of language families, the unity of languages and their diversity, areal linguistics, pidgins, creoles and international languages.

LIN 3700 Language and the Brain. S.
Credits: 3
How sentences are produced, understood, and remembered by the human language user. Linguistic studies of aphasia, mental retardation, and selected communicative skills such as reading will be considered.

LIN 4905 Individual Study in Linguistics. F, W, S, SS.
Credits: 1 to 5
Individual study for Linguistics majors.

GRADUATE COURSES

Linguistics

LIN 5025 Principles of Anthropological Linguistics.
Credits: 5

LIN 5715 Language Acquisition.
Credits: 5

LIN 6118 History of Linguistics.
Credits: 4

LIN 6128 Historical Linguistics.
Credits: 4

LIN 6129 Studies in Linguistic Change.
Credits: 4; max. of 12.

LIN 6136 Principles of Linguistics.
Credits: 4

LIN 6222 Introduction to Phonological Studies.
Credits: 4

LIN 6240 Phonological Theory.
Credits: 4

LIN 6241 Studies in Phonology.
Credits: 4; max. of 12.

LIN 6322 Introduction to Syntactic Studies.
Credits: 4

LIN 6377 Structure of a Specific Language.
Credits: 4

LIN 6380 Syntactic Theory.
Credits: 4

LIN 6381 Studies in Syntax and Semantics.
Credits: 4

LIN 6401 Contrastive Analysis.
Credits: 4

LIN 6415 TESL Observation and Analysis.
Credits: 2

LIN 6416 Materials and Techniques in TESL.
Credits: 4

LIN 6435 Gathering and Analysis of Linguistic Data.
Credits: 4

LIN 6436 Seminar in Linguistic Field Methods.
Credits: 5

LIN 6600 Sociolinguistics.
Credits: 4

LIN 6622 Bilingualism in America.
Credits: 4

LIN 6905 Individual Study.
Credits: 1 to 4

LIN 6910 Supervised Research.
Credits: 1 to 5††

LIN 6932 Rotating Topics.
Credits: 4

LIN 6940 Supervised Teaching.
Credits: 1 to 5††

LIN 6971 Master's Research.
Credits: 1 to 15††

LIN 7980 Doctoral Research.
Credits: 1 to 15††

Linguistics

An individualized major in Linguistics may be approved for undergraduate students in the College of Arts and Sciences. This program is designed to provide the student with a background in the study of language, dialects, communication, and particular languages. It will prepare the student for graduate work in linguistics or the study of languages, the teaching of English as a foreign language, and advanced work in the neurobehavioral sciences. The curriculum includes certain required core courses and optional courses from a variety of fields.

For further information about this program, consult Dr. W.J. Sullivan, 433 Grinter Hall.

MANAGEMENT
College of Business Administration

INSTRUCTIONAL STAFF 1977-78

Horowitz, I., Chairman; Barry, C.B.; Cornelius, W.G.; Davidson, L.M.; Elnicki, R.A.; Feldman, J.M.; Fogler, H.R.; Fox, W.M.; Hass, J.M.; James, J.H.; Jesse, R.R.; Koehler, G.J.; Majthay, A.; Oliver, C.; Reitz, H.J.; Young, J.W.

Management

MAN 3010 Principles of Management. F, W, S, SS.
Credits: 4
Fundamentals of management underlying the solution of problems of organization and operation of business enterprises.

MAN 3151 Foundations of Organizational Behavior. F, W, S.
Credits: 4
The individual, interpersonal and group relations, and intergroup and organizational problems in business. Open only to Business Administration students.

MAN 3301 Personnel Management. F, W, S.
Credits: 4
A comparison and evaluation of public and private personnel practices and techniques of recruiting, selecting, transferring, promoting, classifying, and training workers. Not open to management major.

MAN 4052 Management Philosophy and Practice. W, SS.
Credits: 4; Prereq: Management major or consent of instructor.
Contrasting philosophies of management. Leading management theories. Current issues in management practices.

MAN 4109 Applications Organizational Behavior. F, S.
Credits: 4; Prereq: MAN 3150.
An in-depth examination of current applications of organizational theory and research in modern organizations. May be repeated with change of content up to a maximum of 8 credits.

MAN 4201 Principles of Organization. F, W, S, SS.
Credits: 4; Prereq: MAN 3010.
The process of combining the factors of production through a functional structure to achieve enterprise objectives.

MAN 4310 Problems in Personnel Management. F, W, S, SS.
Credits: 4; Prereq: MAN 4201 or consent of instructor.
Personnel practices and interpersonal relationships involved in managing employees.

MAN 4410 Collective Bargaining. F, S, SS.
Credits: 4; Prereq: MAN 4310 or consent of instructor.
The practice and techniques of collective bargaining with respect to the interrelationships of the individual worker, the union, the employer, and the general public.

MAN 4600 International Management. F, W, S.
Credits: 4; Prereq: MAN 3010.
The managerial problems of planning, organization and control in firms engaging in international business.

MAN 4720 Business Policies. F, S.
Credits: 4
Business policies correlating the functions of sales, procurement, personnel and finance in various industries. Open only to Seniors and graduate students.

MAN 4905 Individual work in Management.
Credits: 1 to 5; Prereq: Senior standing and permission of Department. A written report is required.

GRADUATE COURSES

MAN 5205 Foundations of Management and Organizational Behavior.
Credits: 4

MAN 5511 Production Management Problems.
Credits: 5

MAN 6051 Managerial Planning.
Credits: 4

MAN 6107 Motivation in Organizational Settings.
Credits: 4

MAN 6205 Theory and Skills of Organization Development.
Credits: 4

MAN 6206 Organizational Behavior.
Credits: 4

MAN 6207 Theory of Managerial Organization and Control.
Credits: 4

MAN 6321 Personnel Techniques and Administration.
Credits: 4

MAN 6421 Problems in Collective Bargaining.
Credits: 4

MAN 6905 Individual Work in Management.
Credits: 1 to 5

MAN 6910 Supervised Research.
Credits: 1 to 5††

MAN 6931 Special Topics in Management.
Credits: 4

MAN 6933 Seminar in Management.
Credits: 4

MAN 6940 Supervised Teaching.
Credits: 1 to 5††

MAN 6971 Master's Research.
Credits: 1 to 15††

MAN 7925 Workshop in Management.
Credits: 3

MAN 7980 Doctoral Research.
Credits: 1 to 15††

Quantitative Methods in Business

QMB 4701 Managerial Operations Analysis I. F, W.
Credits: 4; Prereq: QMB 3700.
Introductory survey of input-output analysis, linear programming, and the theory of games and their application in business decision making.

QMB 4702 Managerial Operations Analysis II. S.
Credits: 4; Prereq: MAN 5511 or QMB 4701 or consent of instructor.
Case studies of managerial applications of modern techniques of mathematical programming, statistical analysis, and economic analysis.

QMB 4703 Managerial Operations Analysis III. F, W, S, SS.
Credits: 4; Prereq: MGF 2202 or QMB 3700 or consent of instructor.
Concepts and technique of the simulation approach applied to complex managerial problems.

GRADUATE COURSES

QMB 6607 Decision Processes Under Uncertainty.
Credits: 5

QMB 6697 Optimization in Simulation Modeling.
Credits: 3

QMB 6808 Markov Decision Processes.
Credits: 4

QMB 6809 Decision Processes Under Conflict.
Credits: 3

QMB 6827 Linear Programming for Management Scientists.
Credits: 3

QMB 6837 Graphs and Networks in Managerial Decision Models.
Credits: 1

QMB 6857 Optimization in Static Managerial Models.
Credits: 4

QMB 6865 Optimization in Dynamic Managerial Decision Models.
Credits: 4

QMB 6877 Optimization in Discrete Managerial Decisions.
Credits: 2

MARKETING
College of Business Administration

INSTRUCTIONAL STAFF 1977-78

Cohen, J.B., Chairman; Ahtola, O.T.; Anderson, A.A.; Bechtel, G.G.; Butterworth, J.D.; Faricy, J.H.; Hess, N.R.; LaTour, S.A.; Mazis, M.B.; Popper, E.T.; Thompson, R.B.; Wildt, A.R.; Wilkie, W.L.

Courses numbered 3000 or higher are open only to students with Junior standing. Note,

††Grading is on a S-U basis only.

however, the specific prerequisites for certain courses.

For additional courses, please consult the Business Administration (BA) listing.

MAR 3023 Principles of Marketing. F, W, S, SS.
Credits: 4
Functions, institutions, and methods of marketing goods and services. Relates marketing to the total economic structure and emphasizes the importance of the consumer.

MAR 3203 Marketing Channels. F, W, S.
Credits: 4; Prereq: MAR 3023.
Types, functions, and operating problems of wholesale and retail middlemen.

MAR 3503 Consumer Behavior. F, W, S, SS.
Credits: 4; Prereq: MAR 3023.
An analysis of the buying process focusing on the social, psychological, family and economic determinants of consumer choice.

MAR 4153 Retail Management. F, W, S, SS.
Credits: 4; Prereq: MAR 3023.
A case course designed to train students in the analysis and solution of retail merchandising and operating problems.

MAR 4213 Physical Distribution Management. F, S.
Credits: 4; Prereq: MAR 3023 and MAR 3203.
Nature, organization and administration of physical distribution systems.

MAR 4243 International Marketing. W, SS.
Credits: 4; Prereq: MAR 3023.
The marketing aspects of successful foreign market penetration.

MAR 4303 Promotion Management. F, W, S, SS.
Credits: 4; Prereq: MAR 3503.
The management of personal and non-personal communications in the marketing process. Includes the planning and integration of promotional programs with other marketing activities.

MAR 4403 Sales Management. F, W, S, SS.
Credits: 4; Prereq: MAR 3023.
Principles, methods, and problems relating to the management of a sales force. Selection and training, organization, compensation and stimulation, and control.

MAR 4613 Marketing Research. F, W, S, SS.
Credits: 4; Prereq: MAR 3023, ECO 3411 and QMB 3700.
Research methods applied to marketing; introduction to sampling; collection, analysis, and reporting of data; survey of sales forecasting, market analysis, distribution cost analysis.

MAR 4614 Advanced Marketing Research. S.
Credits: 4; Prereq: MAR 4613.
Design and execution of marketing research studies with emphasis on primary data collection and analysis.

MAR 4713 Marketing Management. F, W, S, SS.
Credits: 4; Prereq: MAR 4613 and Senior standing.
Marketing policies and methods, including product and brand development, channels of distribution, promotion and pricing.

MAR 4763 Credit and Collections. W.
Credits: 4; Prereq: MAR 3023.
Principles and practices in the administration of consumer and mercantile credit.

MAR 4905 Independent Study. F, W, S, SS.
Credits: 1 to 5; Prereq: Senior standing and previous work in the area selected for research. Admission is by consent of the department.

††Grading is on a S-U basis only.

MAR 4933 Special Topics in Marketing. F, W, S.
Credits: 4; Prereq: Permission of Department.
Selected rotating topics in marketing management, research, and theory. May be repeated with a change of content up to a maximum of 8 credits.

GRADUATE COURSES

MAR 5055 Marketing Principles and Institutions.
Credits: 3

MAR 6246 International Marketing.
Credits: 5

MAR 6506 Consumer Behavior.
Credits: 5

MAR 6516 Public Policy Research and Marketing Practices.
Credits: 5

MAR 6606 Quantitative Analysis for Marketing Decisions.
Credits: 5

MAR 6635 Research Issues in Marketing.
Credits: 5

MAR 6616 Seminar in Marketing Research.
Credits: 5

MAR 6717 Seminar in Marketing Management.
Credits: 5

MAR 6806 Seminar in Marketing Theory.
Credits: 5

MAR 6905 Individual Work.
Credits: 1 to 5; Maximum of 10 credits.

MAR 6910 Supervised Research.
Credits: 1 to 5††

MAR 6933 Special Topics in Marketing.
Credits: 5

MAR 6940 Supervised Teaching.
Credits: 1 to 5††

MAR 6971 Master's Research.
Credits: 1 to 15††

MAR 7507 Perspectives in Consumer Behavior.
Credits: 5

MAR 7518 Consumer Information Processing and Decision Making.
Credits: 5

MAR 7625 Advanced Statistical Analysis in Marketing Research.
Credits: 5

MAR 7627 Subjective Measurement in Marketing and Survey Research.
Credits: 5

MAR 7628 Multidimensional Scaling for Market and Societal Analysis.
Credits: 5

MAR 7639 Workshop in Marketing Reserach.
Credits: 4; May be repeated with a change of content up to a maximum of 12 credits.

MAR 7980 Doctoral Research.
Credits: 1 to 15††

MATERIALS SCIENCE AND ENGINEERING
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Verink, E.D., Jr., Chairman; Bates, S.R.; Connell, R.G., Jr. DeHoff, R.T.; Dove, D.B.; Goldberg, E.P.; Gould, R.W.; Guy, A.G.; Hartley, C.S.; Hench, L.L.; Hren, J.J.; Hummel, R.E.; Loehman, R.E.; Onoda, G.Y., Jr.; Pepinsky, R.; Reed-Hill, R.E.; Rhines, F.N.; Rummel, R.A.; Whitney, E.D.

Chemistry
GRADUATE COURSES

CHM 5272 The Organic Chemistry of Polymers. F.
Credits: 3

CHM 5511 Physics and Physical Chemistry of Polymers. S.
Credits: 3

Engineering: Material

EMA 1020 Everyday Utilization of Metals. W, S.
Credits: 2
Metals application in a technological society, conservation of metals, in light of limited natural resources, properties of metals and alloys, metal working and fabrication techniques.

EMA 3010 Materials 1. F, W, S, SS.
Credits: 1 to 6; Prereq: HCM 2045C or CHM 2041C.
Elements of crystallography, plasticity, properties of aggregates, structure of polymers, binary phase diagrams and physical properties of solids.

EMA 3012L Materials 1 Laboratory. F, W, S, SS.
Credits: 1; Prereq. or Coreq: EMA 3010L.
Experiments in crystallography, mechanical properties, phase diagrams, heat-treatment of steels. Designed to accompany or follow EMA 3010 units on structure and mechanical properties.

EMA 3040L Ceramic Science for the Potter. F, S.
Credits: 2
Introduction to scientific principles of forming, drying, and firing various types of pottery. Analyses of good and bad ceramic bodies and glazes using engineering methods to help improve the artist's technique.

EMA 3050 Introduction to Ceramic Materials. W.
Credits: 3; Prereq: EMA 3123.
Uses, structure, processing and properties of ceramic materials. Scientific principles are introduced through discussion of recently developed ceramics for high technology applications.

EMA 3066 Polymer Science and Engineering. S.
Credits: 3; Prereq: EMA 3050. Organic Chemistry desirable.
Introduction to preparation, molecular structure-property relationships, processing and applications of macromolecular materials.

EMA 3080 Phase Diagrams. F.
Credits: 3; Prereq: EMA 3010.
Construction and use of phase diagrams in materials science; descriptive introduction to the thermodynamics of phase diagrams.

EMA 3123 Metallurgical Engineering. F.
Credits: 3; Prereq: EMA 3010; Coreq: EMA 3080.
Preparation, structure, properties and applications of ferrous materials.

EMA 3413 Electronic Properties of Materials. S.
Credits: 3; Prereq: EMA 3010.
Band model description of the electrical, magnetic and optical properties of solids.

EMA 3513 Analysis of the Structure of Materials. W.
Credits: 3; Prereq: EMA 3010.
Crystal structure and bonding in solids with an overview of the tools available for characterizing materials.

EMA 3622L Materials Processing Laboratory. F.
Credits: 1
Preparation, fabrication and processing of metal, ceramic and polymeric materials.

EMA 4121 Materials 2. W.
Credits: 3; Prereq: EMA 3010.
Physical metallurgy of ferrous and non-ferrous metals and their alloys. A correlation of properties, structural and mechanical history, thermal

history, and service behavior of the various metal and their alloys.

EMA 4122 Materials 3. S.
Credits: 3; Prereq: EMA 4121.
Continuation of EMA 4121.

EMA 4124 Structure and Properties of Alloys. F.
Credits: 3; Prereq: EMA 3010.
Quantitative metallography, topology of structures, cast structures, diffusion in solids.

EMA 4125 Microstructural Transformations in Materials. W.
Credits: 3; Prereq: EMA 4314.
Paths, energetics, mechanisms and kinetics of processes that alter the microstructure of materials.

EMA 4144 Physical Characteristics of Ceramics. F.
Credits: 3; Prereq: EMA 4643L or consent of instructor.
Structure of complex ceramic compounds and glasses. Influence of structural imperfections and stoichiometry on physical characteristics, surface and interfacial phenomena, diffusion and phase transformations in ceramic systems.

EMA 4145 Ceramic Microstructures. W.
Credits: 3; Prereq: EMA 4643L or consent of instructor.
Influence of ceramic microstructure on processing. Chemical bonds, surface phenomena, forming energetics, drying and firing kinetics. Diffusion, nucleation, crystal growth, solid-solid and solid-liquid reactions.

EMA 4223 Mechanical Behavior of Materials. W.
Credits: 4; Prereq: EGM 3520.
Plastic deformation and fracture of metals and alloys, ceramics and polymers.

EMA 4224 Mechanical Metallurgy 2. S.
Credits: 3; Prereq: EMA 4223.
Continuation of EMA 4223.

EMA 4314 Energetics and Kinetics in Materials Science. F.
Credits: 4; Prereq: EML 3100 or CHM 4411.
Foundations of energetics and kinetic theory with applications to processes in materials science.

EMA 4324 Stability of Materials. W.
Credits: 4; Prereq: EML 3100 or CHM 4411 or permission of instructor.
Mechanisms, energetics and kinetics of corrosion and degradation of engineering materials. Economic solutions to degradation problems based upon design and materials selection.

EMA 4444 Electronic Ceramics. S.
Credits: 3; Prereq: EMA 4643L or consent of instructor.
An introduction to the electronic, optical, thermal and magnetic properties of non-metallic materials. Special emphasis on important ceramic systems and effect of processing on properties.

EMA 4522L Metallurgy Laboratory 2 — Metallography and Photography. W.
Credits: 1
Laboratory techniques in physical metallurgy with practical emphasis on the surface preparation and photographic recording of the structure of materials. Includes heat treatment, quenching, mechanical forming and mechanical testing of metals and alloys.

EMA 4524L X-ray and Electron Metallography. S.
Credits: 4
X-ray and electron scattering and diffraction with applications to problems in materials analysis. Laboratory included.

EMA 4623 Process Metallurgy 1. W.
Credits: 3; Prereq: PHY 2042 and CHM 2047C or CHM 2043C.
Principles of pyrometallurgy, hydrometallurgy and electrometallurgy, with applications to specific ferrous and non-ferrous metals.

EMA 4624 Process Metallurgy 2. S.
Credits: 3; Prereq: EMA 4623.
Unit operations of process metallurgy including: comminution, classification, flotation, stoichiometry, heat balances, fuels and heat utilization.

EMA 4632L Metallurgy Laboratory 3 — Welding, Brazing, Soldering. S.
Credits: 1
Laboratory techniques involved in various welding and cutting processes; soft soldering, brazing and braze welding. Includes testing and inspection of welds.

EMA 4634L Metal Forming. F.
Credits: 4
Application of theories of elastic and plastic behavior and fracture to metal forming processes, Forging, rolling, extrusion, wire drawing, sheet metal forming. Laboratory included.

EMA 4643L Ceramic Glazes. W.
Credits: 4; EMA 3040L.
Glaze calculations and formulations using programmed instruction assuming little math background. Laboratory to create new individualized glazes.

EMA 4645 Processing of Ceramic Materials. F.
Credits: 3
Introduction to the technology and science of processing ceramic materials, including traditional clay-based ceramics, modern technical ceramics, and glasses. Topics include the nature of fine particles, forming methods, and consolidation by heat.

EMA 4714 Materials Selection and Failure Analysis. S.
Credits: 4
Philosophy and practice of engineering selection of materials. Case studies in product liability and failure analysis.

EMA 4905 Individual Work in Materials Science and Engineering. F, W, S, SS.
Credits: 1 to 6; Maximum of 12 credits.
Selected problems or projects in the student's major field of engineering study. May be repeated for credit with change of content.

EMA 4913 Research in Materials Science and Engineering 1. F, W, S, SS.
Credits: 3
Short research problems in materials science and engineering, usually including a final thesis.

EMA 4914 Research in Materials Science and Engineering 2. F, W, S, SS.
Credits: 3; Prereq: EMA 4913.
Continuation of EMA 4913.

EMA 4935 Special Topics in Materials Science and Engineering. F, W, S, SS.
Credits: 1 to 4; Maximum of 12 credits.
Laboratory, lectures, or conferences covering specially selected topics in materials science and engineering. May be repeated with change of content.

EMA 4940 Field Trips in Materials Science. W.
Credits: 1
Field trips to materials preparation and processing industries in the southeastern states.

EMA 4944 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: 4 EG classification; one term industrial employment, including extra work according to a pre-approved outline.
Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

GRADUATE COURSES

EMA 6106 Advanced Phase Diagrams 1.
Credits: 3

EMA 6107 Advanced Phase Diagrams 2.
Credits: 3

EMA 6110 Electron Theory of Solids for Materials Scientists 1.
Credits: 4

EMA 6111 Electron Theory of Solids for Materials Scientists 2.
Credits: 4

EMA 6112 Electron Theory of Solids for Materials Scientists 3.
Credits: 4

EMA 6126 Advanced Physical Metallurgy 1.
Credits: 4

EMA 6127 Advanced Physical Metallurgy 2.
Credits: 4

EMA 6128 Advanced Physical Metallurgy 3.
Credits: 4

EMA 6136 Diffusion in Solids.
Credits: 3

EMA 6137 Radiation Damage in Solids.
Credits: 3

EMA 6146 Atomic Processes in Crystalline Ceramics.
Credits: 4

EMA 6147 Structure and Properties of Glasses.
Credits: 4

EMA 6226 Advanced Mechanical Metallurgy 1.
Credits: 4

EMA 6227 Advanced Mechanical Metallurgy 2.
Credits: 4

EMA 6316 Metallurgical Thermodynamics.
Credits: 3

EMA 6326 Advanced Topics in Corrosion.
Credits: 3

EMA 6436 Optical Instruments in Materials Research.
Credits: 3

EMA 6437 Growth, Structure and Properties of Thin Films.
Credits: 3

EMA 6446 Electronic Processes in Crystalline Ceramics.
Credits: 4

EMA 6448 Ceramic Processing.
Credits: 4

EMA 6507L Scanning Electron Microscopy and Electron Probe Microanalysis.
Credits: 4

EMA 6508 Quantitative Microscopy.
Credits: 3

EMA 6514L X-ray Spectrochemical Analysis.
Credits: 4

EMA 6516 Advanced X-Ray Diffraction 1.
Credits: 4

EMA 6517 Advanced X-Ray Diffraction 2.
Credits: 3

EMA 6518L Transmission Electron Microscopy.
Credits: 4

EMA 6S19L Specialized Research Techniques in Materials Science.
Credits: 1 to 3; Maximum of 15 credits.

EMA 6580 Science of Biomaterials 1.
Credits: 3

EMA 6581 Science of Biomaterials 2.
Credits: 3

EMA 6905 Individual Work in Materials Science and Engineering.
Credits: 1 to 6; May be repeated with change of content up to a maximum of 12 credits.

EMA 6910 Supervised Research.
Credits: 1 to 5††

EMA 6936 Seminar in Metallurgy.
Credits: 1††

EMA 6937 Seminar in Metallurgy and Ceramic Science.
Credits: 1 to 2

EMA 6938 Special Topics in Materials Science and Engineering.
Credits: 1 to 6; May be repeated with change of content up to a maximum of 9 credits.

EMA 6940 Supervised Teaching.
Credits: 1 to 5††

EMA 6971 Master's Research.
Credits: 1 to 15††

EMA 7008 Product Liability: Effective Use of Engineering Experts.
Credits: 3

EMA 7980 Doctoral Research.
Credits: 1 to 15††

Engineering Technology: General

ETG 3530L Mechanical Testing Laboratory. W.
Credits: 1
Experiments in determining the mechanical behavior of metal, ceramic and polymeric materials.

ETG 3532L Physical Testing Laboratory. S.
Credits: 1
Measurement of physical properties of metal, ceramics, and polymeric materials; thermal, electrical, magnetic, optical and radioactive behavior.

MATHEMATICS
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Bednarek, A.R., Chairman; PopStojanovic, Z.R.; Assoc. Chairman; Bacon, P.; Baird, B.B.; Blevins, D.K.; Block, L.; Bowman, T.T.; Brechner, B.L.; Brooks, J.K.; Burnap, C.A.; Cenzer, D.A.; Chen, S.; Dinculeanu, N.; Drake, D.A.; Draper, J.A.; Edwards, B.H.; Farmer, K.B.; Hale, M.P.; Kallman, R.R.; Kalman, R.E.; Keesling, J.E.; Larson, J.A.; Long, R.L.; Luehr, C.P.; Martinez, J.; Mauldin, R.D.; Moore, T.O.; Nelson, C.W.; Popov, V.M.; Ritter, G.A.; Ritter, G.X.; Row, A.W.; Saxon, S.A.; Scott, M.W.; Sigmon, K.N.; Slagle, J.G.; Teply, M.L.; Ulam, S.M.; Varma, A.K.; Walsh, T.; White, N.L.; Willard, D.; Wilson, D.C.; Yoh, R.; Zarantonello, S.E.

I. General Information

Students whose mathematical background is weak should take MAC 1132. Others may take one of the calculus courses as follows: Architectural students MAC 2223, Business Administration students MAC 3311, Engineering and Science students MAC 3311, Mathematics Education students MAC 3311, Mathematics majors MAC 3472. Superior students may substitute MAC 3472 for MAC 3311. Students who have had calculus in high school should consult with one of the department advisers.

II. Program for Mathematics Majors

Courses	Credits
1. Calculus MAC 3472-3-4 (or MAC 3311-2-3)	15
2. Algebra MAS 4103-4, MAS 4311-2	14
3. Analysis MAA 4211-2-3	9
4. Electives from list below	13
Total	51

Electives: MAC 3314, MAP 3302, MHF 3202, MAS 3203, MAS 3113, MAS 4115, MAP 4413, MAP 4414, MAP 4305, MAS 4124, MAD 4401, MAS 4156, MAA 4402, MAP 4423, MAP 4341, MAS 4105, MAS 4313, MAD 4504, MTG 4233, MTG 4234.

III. Baccalaureate Honors Program

To earn Baccalaureate Honors a student shall:

A. Take the following courses:

Courses	Credits
1. Calculus MAC 3472-3-4 (or MAC 3311-2-3)	15
2. Algebra MAS 4103-4, MAS 4311-2	14
3. Analysis MAA 4211-2-3 (or MAA 4226-7-8 or MAA 4102-3-4)	9
4. Set Theory MHF 4102, Topology MTG 4302-3	12
5. Electives from list given in ii	10
Total	60

B. Earn at the University of Florida at least 20 credits in mathematics courses of 4000 level or above including MHF 4102, MTG 4302-3.

C. Have a grade point average of 3.3 or higher in all mathematics courses of 4000 level or above taken at the University of Florida.

D. Have a grade point average of 3.3 or higher in upper division work.

IV. Mathematics Education Program

The Mathematics Education Program is for students wishing to receive a degree in Mathematics through the College of Arts and Sciences while simultaneously getting accreditation for teaching secondary mathematics. The minimum mathematics requirements are:

	Credit Hours
1. Calculus MAC 3311-2-3 (or MAC 3472-3-4)	15
2. Algebra MAS 3301-2 (or MAS 4311-2)	6
3. Geometry MTG 3212-3	6
4. Electives, chosen from below	13
Total	40

Electives: MAS 3203, MTG 3214, MAS 3113, MAS 4313, MAE 4830, MAE 4831, MAE 4870, MHF 4404, MAA 4211, MAA 4212, MAA 4213, STA 3023 or STA 4321, STA 4404, EIN 3114 or COP 3110, COC 3110, or other mathematics courses chosen with the advice of a counselor.

In addition, the Mathematics Education major must take the following Education courses (though only 24 hours of this counts toward minimum required hours for graduation):

	Credit Hours
EDF 3135	5
EDF 3514 or EDF 3604 or EDF 4542 or EDF 4710	5
ESE 4011	5
ESE 4210	4
MAE 4330	5
ESE 4943	16

NOTE: A student wishing to change from one program to another should consult a mathematics adviser as to which courses in the various programs are interchangeable. However no credit toward the major will be given for both MAS 4311 and MAS 3301 or for both MAS 4312 and MAS 3302. All courses are listed according to the alphabetical order of their prefixes and numerical order within them.

Mathematics — Analysis

MAA 4102 Introduction to Advanced Calculus 1. F, W.
Credits: 3
Foundations of calculus of functions of real variables, differentiation, Reimann-Stielties integration, multiple and line integrals, infinite series.

MAA 4103 Introduction to Advanced Calculus 2. W, S.
Credits: 3
A continuation of MAA 4102.

MAA 4104 Introduction to Advanced Calculus 3. S, SS.
Credits: 3
A continuation of MAA 4103.

MAA 4211 Intermediate Calculus 1. F, W.
Credits: 3; Prereq: MAC 3313 or MAC 3474.
Review of limits, differentiation and integration, partial differentiation, multiple integration, series, and complex numbers.

MAA 4212 Intermediate Calculus 2. W, S.
Credits: 3; Prereq: MAA 4211.
A continuation of MAA 4211.

MAA 4213 Intermediate Calculus 3. S, SS.
Credits: 3; Prereq: MAA 4212.
A continuation of MAA 4212.

MAA 4226 Introduction to Modern Analysis 1. F.
Credits: 3
Topology of metric spaces, numerical sequences and series, continuity, differentiation, the Riemann-Stielties integral, sequences and series of functions, the Stone-Weierstrass theorem, functions of several variables, Stokes' theorem, the Lebesque theory.

MAA 4227 Introduction to Modern Analysis 2. W.
Credits: 3
A continuation of MAA 4226.

MAA 4228 Introduction to Modern Analysis 3. S.
Credits: 3
A continuation of MAA 4227.

MAA 4402 Elements of Complex Variables for Engineers and Physical Scientists. F, W, S, SS.
Credits: 4; Prereq: MAP 3302.
Introduction to the theory of functions of a complex variable.

Mathematics: Calculus and Precalculus

MAC 1104 Precalculus Algebra, F, W, S, SS.
Credits: 4
Elementary algebra, functions, and coordinate systems. Admission limited to students in special services programs.

MAC 1132 Algebra and Trigonometry. F, W, S, SS.
Credits: 5
Elementary Algebra, Functions and Coordinate Geometry, and Trigonometry. Does not count as major credit in mathematics. This course is especially important for students planning to take calculus and who do not have the necessary algebra and trigonometry background.

MAC 1132L Self-paced Algebra and Trigonometry. F, W, S, SS.
Credits: 3
A self-paced continuation of MAT 1033. Topics include algebra, coordinate geometry, and trigonometry. MAT 1033 and MAC 1132L together are equivalent to MAC 1132. Materials are available from Teaching Center of the Office of Instructional Resources, in SW Broward basement.

MAC 2144 Trigonometry and Analytic Geometry. F, W, S, SS.
Credits: 3; Prereq: MAC 1104.
Trigonometry functions, triangles, trigonometric identities; plane analytic geometry, lines and

††Grading is on a S-U basis only.

circles, functions and limits. Admission limited to students in special services programs.

MAC 2223 Analytic Geometry and Calculus for Architecture, F, W, S, SS.
Credits: 5
A geometric and heuristic approach to plane analytic geometry and calculus. Includes both differentiation and integration of simple algebraic and trigonometric functions including the finding of moments and centroids and the interpretation of derivatives and integrals.

MAC 2233 Calculus for Economics and Business. F, W, S, SS.
Credits: 5
Topics include differential calculus, introduction to integration, introduction to partial differentiation, maxima and minima problems.

MAC 3224 Advanced Calculus for Architecture. F, S.
Credits: 4; Prereq: MAC 2223 or equivalent.
To be scheduled by students choosing to enter any of the graduate Architectural Technology Programs. A continuation of MAC 2223 with further studies in partial differentiation, multiple integration, some elements of vector analysis, matrix theory and determinants, some elements of differential equations.

MAC 3311 Analytic Geometry and Calculus 1. F, W, S, SS.
Credits: 5
Introduction to analytic geometry, limits, derivatives of algebraic functions, differentials, and applications.

MAC 3312 Analytic Geometry and Calculus 2. F, W, S, SS.
Credits: 5; Prereq: MAC 3311.
The definite integral, the indefinite integral and antiderivative, the fundamental theorem of integral calculus, transcental functions, their derivative and integrals, and applications.

MAC 3313 Analytic Geometry and Calculus 3. F, W, S, SS.
Credits: 5; Prereq: MAC 3312.
Methods of integration, infinite series, and applications.

MAC 3314 Analytic Geometry and Calculus 4. F, W, S, SS.
Credits: 5; Prereq: MAC 3313.
Solid analytic geometry, vectors, partial derivatives, multiple integrals.

MAC 3411 Differential Calculus. F, W, S, SS.
Credits: 4; Prereq: MAC 2144.
Derivatives, differentiation formulas, curve sketching; applications of derivatives. Admission limited to students in special services programs.

MAC 3472 Introduction to Real Analysis 1. F, W.
Credits: 5
A first course in calculus for students who particularly enjoy the mathematics and have a sound background in high school mathematics; MAC 3472-3-4 includes the topics differentiation and integration of functions of one or more variables, convergence of sequences and series, continuity, uniform continuity and uniform convergence.

MAC 3473 Introduction to Real Analysis 2. W, S.
Credits: 5; Prereq: MAC 3472.

MAC 3474 Introduction to Real Analysis 3. S, SS.
Credits: 5; Prereq: MAC 3473.

Mathematics — Discrete

MAD 3104 Discrete Structures. F, W, S, SS.
Credits: 4
Set algebra, functions, and relations, Induction and recursion Propositional and predicate logic. Topics from modern algebra. Graphs, algorithms and flow diagrams. Applications to CIS.

MAD 4203 Combinatories 1. W.
Credits: 3
Permutations and Combinations, Binomial Coefficients, Inclusion-Exclusion, Recurrence Relations, Fibonacci Sequences, Generating Functions, Graph-coloring Problems, Chromatic Polynomials, Arrangements.

MAD 4204 Combinatories 2. S.
Credits: 3; (Cont. of MAD 4203).
Permutations and Combinations, Binomial Coefficients, Inclusion-Exclusion, Recurrence Relations, Fibonacci Sequences, Generating Functions, Graph-coloring Problems, Chromatic Polynomials, Arrangements.

MAD 4401 Numerical Methods in Analysis. W, SS.
Credits: 3; Prereq: MAP 3302.
Numerical integration and differentiation, differential equations, partial differential equations, harmonic analysis.

MAD 4504 Computability and Unsolvability. S
Credits: 4; Prereq: Junior or Senior standing.
Computability, algorithms, turing machines, Computability, algorithms, turing machines, recursive functions, decidability, and unsolvability. A course primarily for students of mathematics, philosophy, and Computer and Information Sciences.

Mathematics Education

MAE 3810 Mathematics for Elementary School Teachers 1. F, S, W, SS.
Credits: 3
A study of the structure of whole numbers and newer mathematical topics included in modern elementary school mathematics programs.

MAE 3811 Mathematics for Elementary School Teachers 2. F, W, S, SS.
Credits: 3; Prereq: MAE 3810.
Properties and operations of rational numbers, ratio, proportion, per cent, and an introduction to real numbers.

MAE 3812 Mathematics for Elementary School Teachers 3. W, S, SS.
Credits: 3; Prereq: MAE 3811 or by permission of the instructor.
Topics include an introduction to equations, inequalities, and geometry as these topics are related to modern elementary mathematics programs, and the nature of mathematical systems.

MAE 3822 Mathematics for Junior High School Mathematics Teachers 1. SS.
Credits: 3
An analysis of extension of concepts included in modern junior high school mathematics programs such as state adopted texts or SMSG material 7, 8 and 9. Topics include sets, properties and operations of the real numbers, numeration systems and bases, additional work in ratios and proportion, percentage, aspects of measurement and geometry, and number congruences.

MAE 3823 Mathematics for Junior High School Mathematics Teachers 2. SS.
Credits: 3; Prereq: MAE 3822.
A continuation of MAE 3822.

MAE 3836 Calculus for Teachers 1.
Credits: 3; Offered by extension only. Prereq: A basic course in calculus or permission of the instructor.
Designed as an off-campus and in-service course. Limits; continuity; differentiation of algebraic, trigonometric, exponential, and logarithmic functions; derivatives, antiderivatives, curve tracing, and series.

MAE 3837 Calculus for Teachers 2.
Credits: 3; Offered by extension only. Prereq: MAE 3836.
A continuation of MAE 3836.

MAE 3838 Calculus for Teachers 3.
Credits: 3; Offered by extension only. Prereq: MAE 3837.
A continuation of MAE 3837.

MAE 4830 Mathematics for Senior High School Teachers 1. F, SS.
Credits: 4; Prereq: 9 hours of college mathematics or permission of instructor.
Logic; nature of proof; the ordered field of real numbers; sequences, series and the limit concept; relations and functions; complex numbers.

MAE 4831 Mathematics for Senior High school Teachers 2. W, SS.
Credits: 4; Prereq: MAE 4830 or permission of instructor.
Algebra or vectors; limits, continuity and derivations; exponential, logarithmic and circular functions; probability.

MAE 4870 Topology for Senior High School Teachers. W.
Credits: 4
Introductory survey course covering the following topics: Sets and functions, metric spaces, topological spaces, compactness, connectedness, and separation properties. Emphasis is placed on metric topologies.

Mathematics — Applied

MAP 3302 Elementary Differential Equations. F, W, S, SS.
Credits: 3; Prereq: MAC 3313.
First order differential equations, theory of linear differential equations, solution of linear equations with constant coefficients, the Laplace transform, solution of equations by the Laplace transform.

MAP 4305 Introduction to Differential Equations for Engineers and Physical Scientists. F, W, S, SS.
Credits: 3; Prereq: MAP 3302.
Series solutions of differential equations, Sturm-Liouville Systems.

MAP 4316 Differential Equations I. W.
Credits: 3; Prereq: MAA 5228 or MAA 4213 and some linear algebra.
Existence theorems for ordinary differential equations, initial and boundary value problems.

MAP 4317 Differential Equations 2. S.
Credits: 3; Prereq: MAP 4316.
Par of sequence MAP 4316-7.

MAP 4341 Elements of Partial Differential Equations. F, S, SS.
Credits: 3; Prereq: MAP 3302. Recommended MAP 4305.
Origin and solution of partial differential equations by various methods including Lagrange linear equations; elementary partial differential equations of mathematical physics.

MAP 4413 Fourier Series and Transforms 1. W.
Credits: 4; Prereq: MAP 3302; Rec: MAP 4305.
A two quarter introduction to Fourier series, Orthogonal systems in general. Convergence of Fourier series and various expansions. Laplace, Fourier and Z transforms and their mutual relationship, convolutions. Operational calculus, computational methods including the fast Fourier transform, second order stationary processes, their auto-correlation functions, and problems of interpolation, extrapolation, filtering and smoothing for second order stationary processes.

MAP 4414 Fourier Series and Transforms 2. S.
Credits: 4; Prereq: MAP 4413.
A continuation of MAP 4413.

Descriptions

MATHEMATICS

MAP 4423 Elements of Operational Calculus. W, SS.
Credits: 3
Continuation of the study of analytic functions, Fourier and Laplace transforms.

Mathematics: Algebraic Structures

MAS 3113 Matrices and Vector Spaces. F, W, S, SS.
Credits: 4; Prereq: MAC 3311 or MAC 2223 or MAE 4830.
Linear equations and matrices; elementary determinants. Linear geometry of Euclidean space; vector spaces and linear transformations.

MAS 3114 Computational Linear Algebra. F, W.
Credits: 4; Prereq: MAC 3312.
Linear equations, matrices and determinants. Vector spaces and linear transformations. Inner products and eigenvalues. This course emphasizes computational aspects of linear algebra.

MAS 3203 Introduction to Number Theory. S, SS.
Credits: 3; Prereq: 9 hours of mathematics.
Divisibility, primes and composites, divisors, multiples, Euclid's algorithm, Diophantine equations, modular arithmetic, and simple continued fractions.

MAS 3301 Introduction to Abstract Algebra. F, S, SS.
Credits: 3; Prereq: MAC 3311 or MAC 2223 or MAE 4830.
Properties of the natural numbers, intergers, and rational numbers, Groups, semigroups, rings, integral domains, fields, isomorphisms, homomorphisms, and equivalence classes.

MAS 3302 Abstract Algebra. F, W, SS.
Credits: 3; Prereq: MAS 3301.
A continuation of MAS 3301.

MAS 4103 Linear Algebra 1. F, W.
Credits: 4; Prereq: MAC 3312.
Linear equations, matrices, vector spaces, linear transformations, determinants, eigenvalues, inner product spaces, spectral theorem.

MAS 4104 Linear Algebra 2. W, S.
Credits: 4
A continuation of MAS 4103.

MAS 4105 Linear Algebra 3. S.
Credits: 4
Advanced undergraduate topics in linear algebra rotated from among the following: Canonical forms, geometry of inner products and quadratic forms, linear groups, multilinear algebra.

MAS 4115 Advanced Matrix Theory.
Credits: 4; Prereq: MAS 4103-4 or a solid foundation in basic matrix theory, or consent of the instructor.
Matrix theory at an advanced level. Generalized eigenvalues, simultaneous diagonalization, generalized and conditional inverses, trace theorems, inequalities, properties of special matrices, perturbation theory, selected topics.

MAS 4124 Numerical Methods in Linear Algebra. F, S.
Credits: 3; Prereq: MAS 3113, MAS 3114, or MAS 4103.
Solution of linear equations, matrix methods, matrix eigenvalue problems. Introduction to computer methods.

MAS 4156 Introduction to Vector Analysis. F, W, S.
Credits: 3; Prereq: MAC 3314. Vector analysis including the integral theorems; applications.

MAS 4311 Survey of Modern Algebra 1. F, W, S.
Credits: 3; Prereq: MAC 3313, MAC 2233, MAC 3224.
Sets and mappings, the integers, rings and domains, fields, groups and subgroups, homomorphisms and isomorphisms.

MAS 4312 Survey of Modern Algebra 2. W, S, SS.
Credits: 3; Prereq: MAS 4311.
A continuation of MAS 4311.

MAS 4313 Survey of Modern Algebra 3. S, SS.
Credits: 3; Prereq: MAS 4312.
Variable topics based upon material in MAS 4311 and 4312.

MAS 4321 Modern Applied Algebra 1. F.
Credits: 4; Prereq: MAC 3313.
Sets and relations, graphs, Boolean algebra, with applicative to switching circuits and computer design.

MAS 4322 Modern Applied Algebra 2. W.
Credits: 4; Prereq: MAS 4321 or consent of instructor.
Groups and rings with applications to groups.

Mathematics

MAT 1033 Basic Algebra. F, W, S, SS.
Credits: 2
A self-paced course for students with deficiencies in algebra. Topics include real numbers, solving linear and quadratic equations, radicals, exponents, graphing, and logarithms. Information and placement materials are available from the Department office and Teaching Center of the Office of Instructional Resources, in SW Broward basement.

MAT 4905 Individual Work. F, W, S, SS.
Credits: 1 to 4; Maximum of 15 credits: Prereq: MAC 3313 and permission of Chairman of Department.
For special topics not obtainable in the regular course offerings. May be repeated for credit.

MAT 4930 Special Topics in Mathematics. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of the Chairman of the Department's Undergraduate Advisory Panel who should be consulted well in advance of registration.
May be repeated for credit. Maximum of 24 credits.

Mathematics: General and Finite

MGF 2202 Basic Mathematics for the Social Sciences. F, W, S, SS
Credits: 4
Introductory course in the following topics; Compound statements, set and subsets, partitions and counting, probability theory, vectors and matrices, and linear programming.

Mathematics: History and Foundations

MHF 3202 Sets and Logic. F, W, S, SS.
Credits: 4
Examples of sets, operations on sets, set algebra, Venn diagrams, truth tables, tautologies, applications to mathematical arguments and mathematical induction.

MHF 4102 Elements of Set Theory. F.
Credits: 4; Required for Baccalaureate Honors.
The basic axioms and concepts of Set Theory.

MHF 4404 History of Mathematics. F, SS.
Credits: 3; Prereq: 12 hours of mathematics or permission of instructor.
A survey of the historical development of precalculus mathematics.

Mathematics: Technology and Business

MTB 3364 Introduction to Metric System. F, W, S, SS.
Credits: 1
Metric measures and their relationship to the other systems of measures.

Mathematics: Topology and Geometry

MTG 3212 Geometry 1. F, W, SS.
Credits: 3; Prereq: 6 hours of mathematics.
A systematic study of the axiomatic structure of Euclidean geometry, including a comparison of the metric (Birkhoff) and synthetic (Hilbert) developments of absolute geometry; parallelism, similarity, area, lines and planes inspace, solid mensuration.

MTG 3213 Geometry 2. W, S.
Credits: 3; Prereq: MTG 3212 or permission of the instructor.
A continuation of MTG 3212.

MTG 3214 Geometry 3. S.
Credits: Credits: 3; Prereq: MTG 3213 or permission of the instructor.
A continuation of MTG 3213. This course also includes an introduction to Non-Euclidean geometry.

MTG 4233 Projective Planes and Related Topics I. F.
Credits: 4; Prereq: MAS 3113 or MAS 4103.
Review of linear algebra; projective and affine planes: coordinization theorems, subplanes, ovals, collineations; Latin squares, nets; block designs.

MTG 4234 Projective Planes and Related Topics II. W.
Credits: 4; Prereq: MTG 4233.
Continuation of MTG 4233.

MTG 4302 Elements of Topology 1, W, S.
Credits: 4; Required for Baccalaureate Honors.
Continuation of MHF 4102. The basic concept of general topology.

MTG 4303 Elements of Topology 2. S, SS.
Credits: 4; Required for Baccalaureate Honors.
Continuation of MTG 4302.

GRADUATE COURSES

Mathematics — Analysis

MAA 5102 Advanced Calculus 1. F, W.
Credits: 3; Prereq: MAC 3313.

MAA 5103 Advanced Calculus 2. W, S.
Credits: 3; Prereq: MAA 5102.

MAA 5104 Advanced Calculus 3. S, SS.
Credits: 3; Prereq: MAA 5103.

MAA 5226 Modern Analysis 1. F.
Credits: 3; Prereq: MAC 3313.

MAA 5227 Modern Analysis 2. W.
Credits: 3; Prereq: MAA 5226.

MAA 5228 Modern Analysis 3. S.
Credits: 3; Prereq: MAA 5227.

MAA 5402 Introduction to Complex Variables for Engineers and Physical Scientists. F, W, S, SS.
Credits: 4; Prereq: MAP 3302.

MAA 5506 Introduction to Functional Analysis 1. F.
Credits: 4; Prereq: One quarter of linear algebra and some analysis or consent of the instructor.

MAA 5507 Introduction to Functional Analysis 2. W.
Credits: 4; Prereq: MAA 5506.

MAA 6236 Mathematical Analysis for Statisticians 1.
Credits: 4

MAA 6237 Mathematical Analysis for Statisticians 2.
Credits: 4

MAA 6238 Mathematical Analysis for Statisticians 3.
Credits: 4

MAA 6406 Complex Analysis 1.
Credits: 3

MAA 6407 Complex Analysis 2.
Credits: 3

MAA 6408 Complex Analysis 3.
Credits: 3

MAA 6616 General Theory of Measure and Integration 1.
Credits: 3

MAA 6617 General Theory of Measure and Integration 2.
Credits: 3

MAA 6618 General Theory of Measure and Integration 3.
Credits: 3

MAA 6626 Advanced Topics in Integration 1.
Credits: 3

MAA 6627 Advanced Topics in Integration 2.
Credits: 3

MAA 6628 Advanced Topics in Integration 3.
Credits: 3

MAA 7526 Advanced Topics in Functional Analysis 1.
Credits: 3

MAA 7527 Advanced Topics in Functional Analysis 2.
Credits: 3; Prereq: MAA 7526.

MAA 7528 Advanced Topics in Functional Analysis 3.
Credits: 3; Prereq: MAA 7527.

Mathematics — Discrete

MAD 5306 Theory of Graphs 1. W.
Credits: 4

MAD 5307 Theory of Graphs 2. S.
Credits: 4

MAD 5405 Numerical Methods of Differential Equations.
Credits: 4

MAD 6206 Combinatorial Theory 1.
Credits: 3

MAD 6207 Combinatorial Theory 2.
Credits: 3

MAD 6208 Combinatorial Theory 3.
Credits: 3

MAD 6407 Numerical Analysis.
Credits: 4

Mathematics Education

MAE 6940 Supervised Teaching.
Credits: 1 to 5††

Mathematics — Applied

MAP 5304 Intermediate Differential Equations for Engineers and Physical Scientists. F, W, S, SS.
Credits: 3

MAP 5345 Introduction to Partial Differential Equations. F, S, SS.
Credits: 3

MAP 5423 Introduction to Operational Calculus. W, SS.
Credits: 3

MAP 6216 Introduction to Calculus of Variations for Engineers and Physical Scientists.
Credits: 3

MAP 6356 Partial Differential Equations 1.
Credits: 3

MAP 6357 Partial Differential Equations 2.
Credits: 3

MAP 6358 Partial Differential Equations 3.
Credits: 3

MAP 6417 Fourier Series 1.
Credits: 3

MAP 6418 Fourier Series 2.
Credits: 3

MAP 6467 Stochastic Differential Equations and Filtering Theory 1. F.
Credits: 3

MAP 6468 Stochastic Differential Equations and Filtering Theory 2.
Credits: 3

MAP 6469 Stochastic Differential Equations and Filtering Theory 3.
Credits: 3

MAP 6505 Mathematical Methods of Physics and Engineering 1.
Credits: 3

MAP 6506 Mathematical Methods of Physics and Engineering 2.
Credits: 3

MAP 6507 Mathematical Methods of Physics and Engineering 3.
Credits: 3

MPA 7436 Seminar in Applied Mathematics 1.
Credits: 3

MAP 7437 Seminar in Applied Mathematics 2.
Credits: 3

MAP 7438 Seminar in Applied Mathematics 3.
Credits: 3

MAP 7475 Seminar in Mathematical System Theory.
Credits: 3

MAP 7477 Introduction to Mathematical System Theory 1.
Credits: 4

MAP 7478 Introduction to Mathematical System Theory 2.
Credits: 4

Mathematics: Algebraic Structures

MAS 5156 Vector Analysis. F, W, S, SS.
Credits: 3; Prereq: MAC 3314.

MAS 5331 Introductory Algebra 1. F.
Credits: 3; Prereq: MAS 4312 or MAS 4103.

MAS 5332 Introductory Algebra 2. W.
Credits: 3; Prereq: MAS 5331.

MAS 5333 Introductory Algebra 3. S.
Credits: 3; Prereq: MAS 5332.

MAS 5334 Rings, Modules and Linear Algebra.
Credits: 4; Prereq: Undergraduate linear algebra.

MAS 6158 Tensor Analysis.
Credits: 3

MAS 6329 Application of Group Theory in the Physical Sciences.
Credits: 3

MAS 6346 Algebra 1.
Credits: 3

MAS 6347 Algebra 2.
Credits: 3

MAS 6348 Algebra 3.
Credits: 3

MAS 7215 Theory of Numbers 1.
Credits: 3

MAS 7216 Theory of Numbers 2.
Credits: 3

MAS 7217 Theory of Numbers 3.
Credits: 3

MAS 7396 Advanced Topics in Algebra 1.
Credits: 3

MAS 7397 Advanced Topics in Algebra 2.
Credits: 3

MAS 7398 Advanced Topics in Algebra 3.
Credits: 3

Mathematics

MAT 6905 Individual Work.
Credits: 1 to 4

MAT 6910 Supervised Research.
Credits: 1 to 5††

MAT 6932 Special Topics in Mathematics.
Credits: 3

MAT 6971 Master's Research
Credits: 1 to 15††

MAT 7980 Doctoral Research.
Credits: 1 to 15††

Mathematics: History and Foundations

MHF 5107 Introduction to Set Theory.
Credits: 4

MHF 6306 Mathematical Logic 1.
Credits: 3

MHF 6307 Mathematical Logic 2.
Credits: 3

MHF 6308 Mathematical Logic 3.
Credits: 3

Mathematics: Topology and Geometry

MTG 5316 Introduction to Topology 1.
Credits: 4; Prereq: MHF 5107.

MTG 5317 Introduction to Topology 2.
Credits: 4; Prereq: MTG 5316.

MTG 6227 Incidence Geometry 1.
Credits: 3

MTG 6228 Incidence Geometry 2.
Credits: 3

MTG 6237 Projective Geometry.
Credits: 3

MTG 6256 Differential Geometry 1.
Credits: 3

MTG 6257 Differential Geometry 2.
Credits: 3

MTG 6258 Differential Geometry 3.
Credits: 3

††Grading is on a S-U basis only.

Descriptions

MTG 6266 Introduction to Commutative Algebra and Algebraic Geometry 1.
Credits: 3

MTG 6267 Introduction to Commutative Algebra and Algebraic Geometry 2.
Credits: 3

MTG 6268 Introduction to Commutative Algebra and Algebraic Geometry 3.
Credits: 3

MTG 6276 Theory of Convexity 1.
Credits: 3

MTG 6277 Theory of Convexity 2.
Credits: 3; Prereq: MTG 6276.

MTG 6278 Theory of Convexity 3.
Credits: 3; Prereq: MTG 6277.

MTG 6346 Topology 1.
Credits: 4; Prereq: MTG 5317.

MTG 6347 Topology 2.
Credits: 4; Prereq: MTG 6346.

MTG 6348 Topology 3.
Credits: 4; Prereq: MTG 6347.

MTG 7396 Advanced Topics in Topology 1.
Credits: 3

MTG 7397 Advanced Topics in Topology 2.
Credits: 3

MTG 7398 Advanced Topics in Topology 3.
Credits: 3

MECHANICAL ENGINEERING
College of Engineering

INSTRUCTIONAL STAFF 1977-78

Gaither, R.B., Chairman; Farber, E.A.; Freeman, W.L.; Gater, R.A.; Hsieh, C.K.; Ingley, H.A.; Ingman, H.M.; Irey, R.; Mahig, J.; Morrison, C.A.; Oliver, C.C.; Patterson, E.P.; Protrowski, G.; Roan, V.P.; Samuel, J.A.; Sandor, G.I.; Tesar, D.; Vance, J.M.

Engineering: Mechanical

EML 2002 Conceptual Design of Thermal and Mechanical Systems.
Credits: 3; Prereq: Soph. or Junior Class.
An introductory course for mechanical engr. majors and others interested in conceptual aspects of mechanical design. Lectures on the design process are integrated with creative design projects.

EML 3005 Introduction to Mechanical Engineering Design. F, W.
Credits: 3 to 5; Prereq: EGN 1111; Coreq: EGM 3511.
Study and application of the design process, as related to mechanical and thermal systems. Exercises in problem definition, idea generation, decision making, selection of standard parts, and graphical, written, and oral communication. Drawing and machine shop laboratories are integrated with the lecture material.

EML 3100 Thermodynamics 1. F, W, S, SS.
Credits: 5; Prereq: MAC 3314, PHY 2042, CHM 2046.
First and second laws of thermodynamics, microscopic and macroscopic procedures for the calculation of thermodynamic properties, application to example systems.

EML 3101L Thermodynamics Laboratory. F, W, S, SS.
Credits: 1; Prereq: EML 3100, EML 3301C.
Experimental verification of thermodynamic principles.

EML 3102L Thermodynamics 2. F, W, S, SS.
Credits: 4; Prereq: EML 3100.
Microscopic analysis of transport processes, combustion, thermodynamic cycles, and irreversible thermodynamics.

EML 3202 Mechanisms and Kinematics. F, W, S, SS.
Credits: 4; Coreq: EGM 3400.
A study of the mechanisms used in machinery and the analysis of the motion obtained.

EML 3260 Machine Dynamics. F, W, S, SS.
Credits: 4, Prereq: EML 3202; EGM 3400.
Principles of dynamics in the design of machinery.

EML 3301C Instrumentation and Measurements Laboratory. F, W, S, SS.
Credits: 2
Use of precision instruments and measurement standards in mechanical engineering. Preparation of engineering reports.

EML 3321 Manufacturing Processes. F, W, S, SS.
Credits: 3; Prereq: EMA 3010.
Machinery, materials and processes used in manufacturing.

EML 4140 Heat Transfer 1. F, W, S, SS.
Credits: 3; Prereq: MAP 3302; EML 3100; Coreq: EGN 3353.
Analysis of steady state problems of conduction and radiation heat transfer. Introduction to convective transfer.

EML 4141 Heat Transfer 2. F, W, S, SS.
Credits: 3; Prereq: EML 4140; EML 3102; Coreq: EML 4709; EML 3101L. Continuation of EML 4140.
Transient conduction and free and forced convection. Heat transfer with phase change. Thermal systems design.

EML 4220C Mechanical Vibrations. F, W, S, SS.
Credits: 4; Prereq: EGM 3311 or MAP 3302; EGM 3400.
The single degree of freedom systems, multiple degree of freedom systems. Application to mechanical systems with problems employing computer techniques.

EML 4263 Dynamics of Rotating Machinery. S.
Credits: 3; Prereq: EGM 3400.
Analytical basis of design for machines characterized by high speed or massive rotor-shaft assemblies mounted on various types of bearing supports, as exemplified by turboshaft engines, centrifugal or axial flow compressors, vehicle drive trains, etc.

EML 4411 Mechanical Propulsion Systems. W, SS.
Credits: 3; Coreq: EML 3102L.
Gas and liquid fuels, internal combustion engines. Automotive, aircraft, and Diesel power plants.

EML 4411L Mechanical Propulsion Systems Laboratory.
Credits: 1; Coreq: EML 4411.
Testing of lubricants, gasoline, automobile engines, aircraft engines, and high and low speed Diesel engines.

EML 4414 Heat Power Engineering. SS.
Credits: 3; Prereq: EML 3102L.
Steam power plants and their auxiliary equipment.

EML 4414L Heat Power Engineering Laboratory.
Credits: 1; Coreq: EML 4414.
Analysis of fuels, heating value, flue gas analysis, and the testing of boilers, turbines, engines, and steam plant auxiliary apparatus.

EML 4416 Solar Energy. F, S.
Credits: 3; Prereq: EML 3100 or permission of instructor.
Nature and availability, collection and storage, solar properties of materials, conversion to heat, power and electricity for domestic and industrial consumption including transportation.

EML 4419 Aircraft Propulsion. S.
Credits: 3; Prereq: EML 3100; EML 4140 or equivalent. Coreq: EML 4709.
Physical basis of propulsion, gas turbines and ramjet fundamentals. Introduction to compressor and turbine design. Propulsion performance. Unconventional means of propulsion in space.

EML 4450 Energy Conversion. W.
Credits: 3; Prereq: EML 3102L.
Thermomechanical and thermoelectric energy conversion. Conventional and unconventional techniques and analysis for energy systems interactions.

EML 4500 Machine Analysis and Design 1. F, W, S, SS.
Credits: 3; Prereq: EGM 3520; Coreq: EML 3260, or permission of instructor from non-ME students.
Stress analysis of machine elements, design procedure, design of machine elements.

EML 4501 Machine Analysis and Design 2. F, W, S, SS.
Credits: 3; Prereq: EML 3321; EML 4500.
Advanced problems in design, and the design of a complete machine.

EML 4502 Machine Analysis and Design 3. W.
Credits: 3; Prereq: EML 4501.
Machine systems design.

EML 4522 Mechanical Engineering Analysis. F, W, S.
Credits: 3; Prereq: MAP 3302; EGM 3400.
Mathematical Analysis and Controls of Mechanical Engineering Systems, including mechanical, electromechanical, hydraulic, pneumatic and thermal components and subsystems.

EML 4600 Heating and Air Conditioning. W.
Credits: 3; Prereq: EML 4601.
Heating and air conditioning systems. Equipment selection, system arrangement and duct design.

EML 4601 Refrigeration and Air Conditioning. F, S.
Credits: 3; Prereq: EML 3100.
Refrigerating and air conditioning, apparatus and their applications to the industrial, commercial and residential fields.

EML 4601L Refrigeration and Air Conditioning Laboratory.
Credits: 1; Coreq: EML 4601.
Performance tests on air conditioning and refrigeration equipment. AC system design.

EML 4709 Fluid Dynamics. W, S.
Credits: 3; Prereq: EGN 3353; EML 3100.
Thermodynamics and mechanics of fluid flow systems, compressible and incompressible flow systems.

EML 4920 Professional Orientation. F.
Credits: 1; Prereq: Senior Engineering Student.
Principles of mechanical engineering practice, professional standards and ethics.

EML 4926 Mechanical Consulting Practice. W.
Credits: 3; Prereq: Senior standing.
Synthesis and analysis of mechanical engineering systems, planning and execution of engineering contracts, supervision of construction and tests.

EML 4936 Mechanical Engineering Seminar. F, W, S, SS.
Credits: 1; Prereq: Senior Engineering Student.
Presentation of papers on current developments in mechanical engineering.

EML 4945 Practical Work in Mechanical Engineering. F, W, S, SS.
Credits: 1 to 5; Prereq: EG Classification.
Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

EML 4905 Individual Problems in Mechanical Engineering. F, W, S, SS.
Credits: 1 to 5; Prereq: Approval of Department Counselor. GPA 2.3.
Selected problems or projects in the student's major field of engineering study. May be repeated with a change of content up to a maximum of 12 credits.

EML 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5; Prereq: Freshman Year. EG Classification.
Practical co-op work experience under approved industrial supervision.

GRADUATE COURSES

EML 5104 Classical Thermodynamics.
Credits: 3

EML 5105 Statistical Thermodynamics.
Credits: 3

EML 5152 Intermediate Heat Transfer.
Credits: 3

EML 5223 Design Synthesis in Vibrations.
Credits: 3

EML 5224 Engineering Acoustics and Noise Control.
Credits: 3

EML 5273 Advanced Dynamics of Machinery.
Credits: 3

EML 5311 Control System Theory.
Credits: 3

EML 5504 Mechanical Design 1.
Credits: 3

EML 5505 Mechanical Design 2.
Credits: 3

EML 5515 Gas Turbines and Jet Engines.
Credits: 3

EML 5526 Biomechanics of Surgical Implants.
Credits: 3

EML 5527 Similitude in Mechanical Engineering Design.
Credits: 3

EML 5605 Advanced Refrigeration.
Credits: 3

EML 5714 Gas Dynamics of Internal Flow Systems.
Credits: 3

EML 6103 Advanced Thermodynamics.
Credits: 3

EML 6108 Advanced Statistical Mechanics and Kinetic Theory.
Credits: 3

EML 6131 Combustion 1.
Credits: 3

EML 6132 Combustion 2.
Credits: 3

EML 6153 Advanced Heat Transfer.
Credits: 3

EML 6154 Conduction Heat Transfer.
Credits: 3

EML 6155 Convective Heat Transfer 1.
Credits: 3

EML 6156 Convective Heat Transfer 2.
Credits: 3

EML 6157 Radiation Heat Transfer.
Credits: 3

EML 6159 Special Topics in Heat Transfer.
Credits: 3

EML 6254 Advanced Noise Control.
Credits: 3

EML 6272 Dynamics of Machine Systems.
Credits: 3

EML 6274 Dynamic Synthesis of Direct Contact Mechanisms.
Credits: 3

EML 6275 Coplanar Kinematic Synthesis 1.
Credits: 3

EML 6276 Coplanar Kinematic Synthesis 2.
Credits: 3

EML 6277 Spatial Kinematic Synthesis and Analysis.
Credits: 3

EML 6278 Advanced Rotor Dynamics.
Credits: 3

EML 6306L Instrumentation and Measurements Laboratory.
Credits: 1

EML 6312 Feedback Control System Design 1.
Credits: 3

EML 6417 Solar Energy Utilization.
Credits: 3

EML 6418 Special Topics in Solar Energy.
Credits: 3

EML 6452 Energy Conversion.
Credits: 3

EML 6506 Sliding-Element Bearing Analysis and Design.
Credits: 3

EML 6507 Rolling-Element Bearing Analysis and Design.
Credits: 3

EML 6508 Computer-Aided Design Optimization.
Credits: 3

EML 6606 Advanced Air Conditioning 1.
Credits: 3

EML 6607 Advanced Air Conditioning 2.
Credits: 3

EML 6715 Special Topics in Fluid Dynamics.
Credits: 3

EML 6716 Thermodynamics of Fluid Flow 1.
Credits: 3

EML 6717 Thermodynamics of Fluid Flow 2.
Credits: 3

EML 6718 Thermodynamics of Fluid Flow 3.
Credits: 3

EML 6905 Individual Projects in Mechanical Engineering.
Credits: 1 to 5

EML 6906 Advanced Mechanical Laboratory 1.
Credits: 3

EML 6910 Supervised Research.
Credits: 1 to 5††

EML 6911 Mechanical Research 1.
Credits: 1 to 3

EML 6935 Graduate Seminar.
Credits: 1††

EML 6940 Supervised Teaching.
Credits: 1 to 5††

EML 6971 Master's Research.
Credits: 1 to 15††

EML 7980 Doctoral Research.
Credits: 1 to 15††

MECHANIZED AGRICULTURE
College of Agriculture
(Administered by the Department of Agricultural Engineering)

MAG 3052 Engineering Concepts and Agriculture. F.
Credits: 3
Introduction to agricultural mechanization, management of related natural resources, energy systems, application of energy and technology, environmental protection and social interactions.

MAG 3220 Agricultural Mechanics 1. F, W, S.
Credits: 4
Basic principles and development of manual and managerial skills in relation to hand and power tools in construction, repair, and maintenance of agricultural machines and equipment.

MAG 3312 Farm Machinery. F, S.
Credits: 4
The functional requirements, operating principles, performance, safety, and economic application of agricultural field machines and mechanized systems of production.

MAG 3503 Agriculture and Environmental Quality. W. SS.
Credits: 4
Analysis of effects of agriculture on environmental quality; emphasis on agricultural wastes and practices; potential for using agricultural systems for disposal of other wastes; effects of pollution on the agricultural environment.

MAG 3732 Water Management. W.
Credits: 4
Basic hydrology; rainfall, intensity, depth, frequency, distribution and runoff. Conservation practices, land drainage, irrigation and management alternatives are emphasized.

MAG 4062 Principles of Food Engineering. W.
Credits: 5; Prereq: MAC 1132 and five credits of physics.
The functional requirements and principles of operation of systems for handling and processing of food and agricultural products.

MAG 4225 Agricultural Mechanics 2. F, S.
Credits: 5; Prereq: MAG 3220 and upper division classification.
Principles, practices, and decision making in construction, selection, operation, and maintenance of agricultural machines, buildings, and utilities.

MAG 4642 Environmental Systems for Agricultural Structures. S.
Credits: 4; Prereq: MAC 1132.
Effects of the environment on plant and animal production, processing operations, and quality of stored produce. Selection of building materials and sizing of components of environmental systems in agricultural structures to enhance more efficient agricultural production, processing and storage.

MAG 4941 Full Time Practical Work Experience in Mechanized Agriculture. SS.
Credits: 1 to 4††; Prereq: Prior arrangement with advisor, approval of Department Chairman and Dean.

††Grading is on a S-U basis only.

MEDICAL TECHNOLOGY
College of Health Related Professions

INSTRUCTIONAL STAFF 1977-78

Britt, M.S., Chairman; Andiric, L.; Brouillette, J.; Fisher, F.; Hornsby, J.; Jordan, V.G.; Leonard, C.; Liddell, A.; Pursley, L.; Rodeheaver, J.L.

See also course offerings under Health Related Professions (HRP).

Medical Laboratory Sciences

MLS 2030 Introduction to Medical Technology. F, W, S.
Credits: 2
History, ethics and organizations of medical technology. Types of employment and job opportunities.

The courses below are open only to those persons who have been accepted into the Medical Technology Curriculum:

MLS 3308 Fundamentals of Medical Technology-Hematology. F.
Credits: 3
Basic theory in clinical hematology including hematopoiesis, hemoglobinometry, introduction to anemias, principles of cell counting, morphology of normal cells, introduction to hemostasis.

MLS 3308L Introduction to Laboratory Procedures 1. F.
Credits: 1
Basic skills in clinical hematologic procedures.

MLS 3627 Fundamentals of Medical Technology-Clinical Chemistry. W.
Credits: 3
Scientific principles and theory in instrumentation and clinical chemistry.

MLS 3627L Introduction to Laboratory Procedures 2. W.
Credits: 2
Laboratory procedures emphasizing basic skills in instrumentation and clinical chemistry.

MLS 3550 Fundamentals of Medical Technology-Blood Banking. S.
Credits: 3
Principles and theories of immunohematology including blood group antigens and antibodies, selection and processing of donors, preparation and use of blood components.

MLS 3550L Introduction to Laboratory Procedures 3. S.
Credits: 1
Basic laboratory techniques in blood banking.

MLS 4830C Clinical Laboratory Practicum 1. SS.
Credits: 5
Orientation to laboratory technique during supervised rotation through clinical pathology laboratories.

MLS 4831C Clinical Laboratory Practicum 3. F.
Credits: 5
Second quarter of the sequence MLS 4830C, 4831C, 4832C, 4833C.

MLS 4832C Clinical Laboratory Practicum 5. W.
Credits: 5
Third quarter of the sequence MLS 4830C, 4831C, 4832C, 4833C.

MLS 4833C Clinical Laboratory Practicum 7. S.
Credits: 5
Fourth quarter of the sequence MLS 4830C, 4831C, 4832C, 4833C.

MLS 4840C Clinical Laboratory Practicum 2. SS.
Credits: 5
Practical application of laboratory skills during supervised rotations through clinical pathology laboratories.

MLS 4841C Clinical Laboratory Practicum 4. F.
Credits: 5
Second quarter of the sequence MLS 4840C, 4841C, 4842C, 4843C.

MLS 4842C Clinical Laboratory Practicum 6. W.
Credits: 5
Third quarter of the sequence MLS 4840C, 4841C, 4842C, 4843C.

MLS 4843C Clinical Laboratory Practicum 8. S.
Credits: 5
Fourth quarter of the sequence MLS 4840C, 4841C, 4842C, 4843C.

MLS 4850 Principles of Clinical Laboratory Methodology 1. SS.
Credits: 2
The principles and theory of laboratory practice in clinical chemistry and toxicology; hematology; microbiology and parasitology; microscopy and urinalysis; serology; histologic technique; immunology and blood banking; special procedures. Clinical laboratory organization, administration and management are presented.

MLS 4851 Principles of Clinical Laboratory Methodology 2. F.
Credits: 2
The second quarter of the course sequence MLS 4850, 4851, 4852, 4853.

MLS 4852 Principles of Clinical Laboratory Methodology 3. W.
Credits: 2
The third quarter of the course sequence MLS 4850, 4851, 4852, 4853.

MLS 4853 Principles of Clinical Laboratory Methodology 4. S.
Credits: 2
The fourth quarter of the course sequence MLS 4850, 4851, 4852, 4853.

MLS 4934C Seminar in Medical Technology 1. F.
Credits: 1
Selected topics in clinical laboratory methodology; laboratory organization, administration, management; current research, developments, literature, related areas.

MLS 4935C Seminar in Medical Technology 2. W.
Credits: 1
The second quarter of the course sequence MLS 4934C, 4935C, 4936C.

MLS 4936C Seminar in Medical Technology 3. S.
Credits: 1
The third quarter of the course sequence MLS 4934C, 4935C, 4936C.

MEDICINE

For a complete description of the courses offered by the College of Medicine, see the Catalog of the College of Medicine and the Graduate School Catalog.

Interdisciplinary Programs

For well-qualified undergraduates who receive departmental permission, two programs for individual interdisciplinary majors exist within the College of Medicine: one of Biochemical and Neural Sciences and the other in Neurobiology. The former involves course work in the Departments of Biochemistry and Neuroscience and the latter involves course work in the Departments of Neuroscience and Psychology. Both courses involve laboratory research and additional elective courses. Application should be made to the departments concerned in the sophomore or junior years.

BCH 3613 Introduction to Human Molecular Biology. S.
Credits: 3; Prereq: ZOO 2014, APB 2152 or equivalent; CHM 2043 or equivalent.
Introduction to molecular biology of normal and abnormal human systems for students in the Life Sciences. Relationship of biochemistry to advance in medical sciences, organization of human cells, cell duplication and mutability of the human genome, nutrition and metabolic diseases, viral diseases, and cell growth and proliferation (cancer, ageing).

BMS 4021 Introduction to Neurochemistry. S.
Credits: 4; Prereq: Biochemistry.
Methods of neurochemical analysis, Metabolism and function of nervous system chemicals. Synaptic transmission, axoplasmic flow and selected topics of current interest.

BMS 4022 Biochemical and Neural Sciences.
Credits: 1; Prereq: Admission to Interdisciplinary Program in Biochemical and Neural Sciences. A weekly seminar discussing topics of current interest in the biochemical and neural sciences.

BMS 4023 Current Topics in Brain and Behavior.
Credits: 4; Coreq: BMS 4024.
Biological bases of behavior, and structural and functional correlates of learning.

BMS 4024 Experimental Methods in Brain and Behavior. S.
Credits: 1 to 4; Prereq: PSB 3004; Coreq: BMS 4023.
An introduction to current techniques used in research on brain and behavior.

BMS 4025 Introduction to the Neurosciences. F.
Credits: 4; Prereq: ZOO 2014 or equivalent and consent of instructor.
Structure and basic functions of the mammalian nervous system. Human neuroanatomy, including peripheral and central structures from spinal cord to cerebral cortex. Fundamental concepts of neurophysiology, including initiation, propagation and synatic transmission of the nerve impulse. Sensory, motor, and integrative activities. Elements of neurochemistry and neuropharmacology.

BMS 4905 Medical Sciences Senior Research. F, W, S, SS.
Credits: 2 to 5; Prereq: Senior standing and consent of instructor.
Laboratory or literature in investigations or problems of current interest in the medical sciences.

EXP 3719L Laboratory Topics in Psychophysics. F, S.
Credits: 2; Prereq: PSY 2013 or consent of instructor.
A practicum in experimental methodology. Students collect, analyze, and evaluate data on specific problems related to brain mechanisms of skin sensation.

GRADUATE COURSES

BMS 5511 Vision
Credits: 4

GMS 5702 Neurohumors and Behavior. S.
Credits: 4

MICROBIOLOGY & CELL SCIENCE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Smith, P.H., Chairman; Bleiweis, A.S., Associate Chairman; Achey, P.M.; Aldrich, H.C.; Bitton, G.; Brookbank, J.W.; Clem, L.W.; Coleman, S.E.; Davis, F.C., Jr.; Duggan, D.E.; Farrah, S.; Gifford, G.E.; Gregg, J.H.; Hannah, L.C.; Hoffmann, E.M.; Hubbell, D.H.; Ingram, L.O.; Karp, G.C.; Ko-

burger, G.C.; Milam, J.R.; Preston, J.F.; Previc, E.P.; Schneider, N.J.; Smith, K.L.; Tate, R.L.; Tyler, M.E.; Zam, S.G.

"A major in Microbiology and Cell Science requires course background in biology, general and organic chemistry, quantitative analysis, physics and calculus. Major requirements include BCH 4313, MCB 3013, MCB 3013L, PCB 3136 and at least 21 credits of junior and senior level departmental course offerings (BCH 4203 may count toward the 21 credits).. A course in physical chemistry is recommended for students anticipating later work toward a research graduate degree. Undergraduate majors are required to have their major program approved by an undergraduate advisor from the department."

Applied Biology

APB 2170 Microbiology. F, W, S, SS.
Credits: 3
Microorganisms in relation to evolution and higher organisms; their functions in chemical transformation, food, disease and sanitation. Terminal course, not acceptable for admission to advanced microbiology courses. Available for UC credit in Biological Sciences.

APB 2170L Discussion Laboratory in Microbiology. F, W, S, SS.
Credits: 2; Optional with APB 2170.

APB 4544 Human Parasitology. S, F.
Credits: 4; Prereq: BSC 2010C.
Host-parasite relationships of helminth and protozoan diseases important in health sciences and veterinary medicine.

APB 4544L Human Parasitology Laboratory. S.
Credits: 1; Coreq: APB 4544.
Laboratory in human parasitology.

APB 4545L Human Parasitology Laboratory for Medical Technologists. S.
Credits: 1; Coreq: APB 4544.
Diagnostic procedures for identification of human parasitic diseases.

GRADUATE COURSES

APB 5405L Radiation Biology Laboratory. W.
Credits: 2; Coreq: ENU 5626.

APB 6933 Special Topics in Radiation Biology. S.
Credits: 5; Prereq: ENU 5626.

Botany

GRADUATE COURSES

BOT 6256C Plant Cytology. S.
Credits: 5

BOT 6316C Developmental Morphology of Flowering Plants. W.
Credits: 5

BOT 6326C Methods and Applications of Plant Cell and Tissue Culture. S.
Credits: 5

Environmental Engineering Science

GRADUATE COURSE

EES 6106 Environmental Microbiology.
Credits: 4

Microbiology

MCB 3020 Basic Biology of Microorganisms. F, W, S, SS.
Credits: 3; Prereq: BSC 2010C, CHM 3210.
Structure, nutrition and growth of bacteria; characterization of representative bacteria and viruses; metabolic peculiarities, and introduction to genetics and control mechanisms. Prerequisite to all advanced courses.

MCB 3020L Basic Biology of Microorganisms Laboratory.
Credits: 2; Optional with MCB 3020.
Laboratory techniques as a means of the study of the structure, nutrition and growth of microorganisms.

MCB 4203 Bacterial Pathogens. S.
Credits: 3; Prereq: PCB 4233.
Host-parasite relationships in the diseases of man and animals. The characteristics of bacterial pathogens. Basic techniques of isolation and identification.

MCB 4203L Experiments with Bacterial Pathogens. S.
Credits: 2; Optional with MCB 4203.

MCB 4303 Genetics of Microorganisms. S.
Credits: 5; Prereq: MCB 3020, BCH 4313.
Genetics systems in bacteriophage and microorganisms with emphasis on mutation and recombination. Control of metabolic pathways in bacteria.

MCB 4403 Bacterial Cell Structure and Function. F.
Credits: 5; Prereq: CHM 3211; MCB 3020.
An analysis of the cell structure and physiology of bacterial cells. Extensive discussions of cell division and cell growth is provided, along with descriptions of important bacterial cell structures (e.g., cell walls, membranes, flagella, etc.).

MCB 4403L Bacterial Cell Structure and Function Laboratory. F.
Credits: 2; Optional with MCB 4403.
A laboratory in experimental bacteriology. Course covers experiments in microbial metabolism, physiology, structure, and genetics.

MCB 4413 Cell Metabolism and Regulation. W.
Credits: 4; Prereq: CHM 3211, BCH 4313, MCB 3020. MCB 4403 recommended.
Energy metabolism and pathways of prokaryotic and eukaryotic cells; emphasis on quantitation and regulation.

MCB 4503C General Virology. W.
Credits: 5; Prereq: MCB 3020, BCH 4313.
Nature of viruses and mechanisms of infection and replication. Includes bacterial, animal and plant viruses.

MCB 4905 Undergraduate Research. On Demand.
Credits: 2 to 5; Prereq: Permission of undergraduate coordinator.
Individual laboratory research under the close guidance of a selected faculty member. Enrollment limited to undergraduate majors in Microbiology. Required of, but not limited to, candidates for Honors and High Honors. May be repeated up to a maximum of 15 credits.

GRADUATE COURSES

MCB 5605C Advanced Microbial Ecology with Lab.
Credits: 5; Prereq: Permission.

MCB 6127 The Literature of Microbiology.
Credits: 3

MCB 6275 Public Health Microbiology.
Credits: 1 to 6

MCB 6306 Microbial Genetics.
Credits: 5

MCB 6407C Microbial Physiology.
Credits: 5

MCB 6417C Microbial Metabolism.
Credits: 5

MCB 6457C Regulation in Biological Systems.
Credits: 5

MCB 6506 Virology.
Credits: 5

MCB 6506L Virology Laboratory.
Credits: 3

MCB 6520 Viral Diseases.
Credits: 3

MCB 6757C Biology of Uncommon Microorganisms.
Credits: 5

MCB 6905 Experimental Microbiology.
Credits: 1 to 12.

MCB 6910 Supervised Research.
Credits: 1 to 5††

MCB 6913 Research Planning.
Credits: 5

MCB 6930 Seminar.
Credits: 1

MCB 6937 Special Topics in Microbiology.
Credits: 1 to 6

MCB 6940 Supervised Teaching.
Credits: 1 to 5††

MCB 6971 Master's Research.
Credits: 1 to 5††

MCB 7914 Research Conference.
Credits: 1

MCB 7922 Journal Colloquy.
Credits: 1

MCB 7980 Doctoral Research.
Credits: 1 to 15††

Nuclear Engineering Sciences

ENU 5626 Radiation Biology.
Credits: 4; Prereq: 1 year each of college chemistry, physics and biology.

Process Biology

PCB 3136 Cell Structure and Function. F.
Credits: 5; Prereq: BSC 2010C. Coreq: CHM 3210.
Lectures and discussions in the field of cell biology. Emphasis on the interrelation of structure and function, the regulation of metabolism and the specialized activities of plant and animal cells.

PCB 3253 Developmental Biology. W.
Credits: 4; Prereq: BSC 2010C, 2011C.
Lectures on cellular aspects of development, including embryonic development, regeneration and cell culture systems.

PCB 3253L Developmental Biology Laboratory. S.
Credits: 1; Prereq: Optional with PCB 3253.

PCB 4136L Cell Biology Laboratory. W.
Credits: 2; Prereq: PCB 3136.
A laboratory in basic techniques in cell biology, with emphasis on eukaryotic cells.

PCB 4206 Biology of Differentiated Cells. S.
Credits: 3; Prereq: PCB 3136; CHM 3211.
Lectures on the physiology of cell specialization. Emphasis on comparative ultrastructure and function of organelles of differentiated cell types.

PCB 4233 Basic Immunology. W.
Credits: 3; Prereq: MCB 3020.
A survey of the cellular and humoral systems involved in the response of vertebrates to foreign substances. Basic techniques of serology.

††Grading is on a S-U basis only.

MILITARY SCIENCE

PCB 4233L Experiments in Immunology. W.
Credits: 2; Optional with PCB 4233.

PCB 4253 Cellular and Molecular Aspects of Development. S.
Credits: 3; Prereq: PCB 3136, 3253.
The mechanisms underlying embryonic development operating at the cellular and molecular level. Focus on ultrastructural, biochemical, immunological and genetic analysis.

GRADUATE COURSES

PCB 6176 Electron Microscopy of Biological Material. W.
Credits: 2.

PCB 6176L Laboratory in Electron Microscopy. W.
Credits: 2.

PCB 6216 Cytochemistry. S.
Credits: 4.

PCB 6236 Principles of Immunology.
Credits: 5.

PCB 6236L Immunology Laboratory.
Credits: 3

PCB 6256 Current Topics in Developmental Biology. F.
Credits: 3

Zoology

GRADUATE COURSES

ZOO 6226 Protozoology. W.
Credits: 5; Prereq: Instructor's Permission.

MILITARY SCIENCE—AIR FORCE AEROSPACE Studies Program

INSTRUCTIONAL STAFF 1977-78

Smitherman, J.A., Col.; Funkhouser, R.E., Jr., Lt. Col.; Hilton, M.B., Jr., Capt.; Mullis, E.D., Capt.; Winge, G.H., Jr. Capt.

In addition to the requirements listed below, each student enrolled must participate in 10 hours of Leadership Laboratory each quarter. General Military Course students receive instruction on the environment of an Air Force Base, career opportunities available to a commissioned officer, and an introduction to military customs and courtesies. Advanced Professional Officer Course students participate in activities designed to permit practical application of leadership principles and techniques expected of a junior officer.

AIR FORCE—ROTC

AFR 1101C USAF Strategic Offensive Forces. F.
Credits: 1
Introduction to the history, mission, organization and doctrine of the United States Air Force. A study of U.S. Strategic Offensive Forces; the effects and employment of nuclear weapons, the Strategic Air Command and the Navy's Fleet Ballistic Missile System.

AFR 1111C USAF Strategic Defensive Forces. W.
Credits: 1
The concepts of aerospace defense and the mission and functions of NORAD, CONAD, and ADC. A study of the various systems and functions associated with defense against manned bombers and missiles.

AFR 1120C USAF General Purpose and Support Forces. S.
Credits: 1
A brief review of Army, Navy and Marine general purpose forces. An introduction to counterinsurgency and special operations. Tactical air power. A review of the Major Air Commands providing aerospace support functions; airlift, research and development, logistics and education and training.

AFR 2130C The Development of Airpower — The Basic and Early Aspects. F.
Credits: 1
The development of airpower from the beginning of manned flight through the inter-war years. Evolution of air tactics & strategy, and pre-World War II air doctrine. Discussion of the nature of war itself.

AFR 2131C The Development of Airpower—World War II, Berlin Airlift and Korean War. W.
Credits: 1
The development and use of airpower from 1941 through the early fifties. The concept of air superiority. Technological advances in aircraft, the independent Air Force.

AFR 2140C Development of Aerospace Power—Korea to the present. S.
Credits: 1
Discussion of the uses of airpower in the Cuban Missile Crisis, Southeast Asia, North Vietnam and the Middle East. Concepts, doctrine, and the employment of aerospace power in the nuclear age. Technological advances and implications for the future.

AFR 3220C Air Force Management. F.
Credits: 3
Introduction to the Professional Officer Course. Heavy emphasis is placed on development of basic communicative skills needed by modern managers. Overview of the fundamentals of management such as motivation, individual behavior, group and organization structure, to provide a basis for the development of the Air Force junior officer's managerial skills.

AFR 3230C Air Force Leadership. S.
Credits: 3
Further development of communicative skills and consideration of the Air Force manager as a leader. Study of power and politics, strategy and tactics. Personal values versus organizational values and management of change. Introduction to the variables affecting leadership and the professional responsibilities of the officer.

AFR 3231C The Air Force Junior Officer. W.
Credits: 3
A continuing development of communicative skills and introduction to the basic managerial processes such as individual and group decision-making, analytical aids to decision-making, setting objectives, formulating policy, organizing, staffing and controlling. Exploration of Air Force personnel management.

AFR 4201C The Military Profession and Society. F.
Credits: 3
Introduction to elements of military professionalism. Emphasis is placed on examination of military professional development and civil-military relations.

AFR 4210C Elements of Defense Policy. W.
Credits: 3
International and domestic restraints in the formulation of defense policy, the foundations of modern strategy, evolving strategy in the nuclear age, and contemporary strategy and realistic deterrence.

AFR 4211C The Formulation and Implementation of U.S. Defense Policy. S.
Credits: 3
The bureaucratic inputs: The DOD, Congress and the President as organizational actors. Case studies in policy making, with emphasis on innovation and change. Officer classification and assignments. Introduction to military justice.

MILITARY SCIENCE — ARMY ROTC

INSTRUCTIONAL STAFF 1977-78

Novak, J., LTC, PMS; Hardy, J.T., Maj.; McDowell, R.J. Maj; Gibbs, C., CPT; Knowlton, D., CPT.; Rice, J., CPT.; Schweider, T., CPT.

There are no prerequisites for any courses. All 3000 and 4000 level courses are solely for advanced students. Acceptance to these requires approval of the Professor of Military Science.

Student in the 1000 and 2000 level courses may take either classwork (1 credit hour) or Leadership Laboratory (1 credit hour) or both (2 credit hours). Laboratory instruction is progressive beginning with basic drill and advancing to integrated application of leadership techniques and military equipment.

Military Science

MIS 1022C Organization of Army and ROTC. F.
Credits: 1
Introduction, purpose, history and organization of ROTC and the Army; the officer personnel management system; individual weapons instruction and application; introduction and application of map reading and communication principles.

MIS 1220C Branches of the Army. S.
Credits: 1
The missions and roles of the various branches of the Army and their overall respective contribution to the functions of the Army.

MIS 1300C Introduction to the Military Team. W.
Credits: 1
Appreciation of the fundamentals and techniques of small unit tactics; emphasis on firepower, movement, communication; review of basic military team; develops understanding of duties, responsibilities, methods of patrolling.

MIS 1490L Freshman Leadership Laboratory. F.
Credits: 1
Laboratory consists of a two-hour bloc of instruction which directly supports freshman classroom instruction. Students may take classroom (MIS 1022) or laboratory or both.

MIS 1491L Freshman Leadership Laboratory. W.
Credits: 1
Laboratory consists of a two-hour bloc of instruction which directly supports freshman classroom instruction. Students may take classroom (MIS 1300) or laboratory or both.

MIS 1492L Freshman Leadership Laboratory. S.
Credits: 1
Laboratory consists of a two-hour bloc in instruction which directly supports freshman classroom instruction. Students may take classroom (MIS 1220) or laboratory or both.

MIS 1654 Intensified Course: Basic Skills, Tactics, Field Training. F, S, SS.
Credits: 5
A detailed concept of the US Army's mission and roles played by newly commissioned officers in accomplishing same. Primarily leadership training incorporating military tactics and techniques, map reading, communications, weaponry, etc. Course culminates in a 48 hour field training exercise. Successful course completion constitutes credit for freshman/sophomore AROTC. Student must attend 2 hour leadership laboratory weekly.

MIS 2000C The Army as a Profession. W.
Credits: 1
An in-depth examination of the role played by junior officers in the U.S. Army to include potential duty stations and assignment, service customs and courtesies, obligations and benefits. Subject matter is viewed in light of both the tactical and non-tactical environment.

MIS 2300C Tactics—Platoon and Small Units. S.
Credits: 1
To develop an awareness of the principles and fundamentals of tactical operations and tactics with primary emphasis on the planning and coordinating required of a platoon leader and between the elements of the platoon team.

MIS 2493L Sophomore Leadership Laboratory. F.
Credits: 1
Laboratory consists of a two-hour bloc of instruction which directly supports sophomore classroom instruction. Students may take classroom (MIS 2601) or laboratory or both.

MIS 2495L Sophomore Leadership Laboratory. W.
Credits: 1
Laboratory consists of a two-hour bloc of instruction which directly supports Sophomore classroom instruction. Students may take classroom (MIS 2000) or laboratory or both.

MIS 2496L Sophomore Leadership Laboratory. S.
Credits: 1
Laboratory consists of a two-hour bloc of instruction which directly supports sophomore classroom instruction. Students may take classroom (MIS 2300) or laboratory or both.

MIS 2601C Land Navigation and Introduction to Orienteering. F.
Credits: 1
Study and application of basic principles of maps and aerial photographs; terrain appreciation and evaluation; military and topographic map symbols and grid reference systems; orientation, intersection and resection; study and use of lensatic compass. Background of orienteering as a sport and techniques employed in successful competition.

MIS 3305C Tactics—Company, Military Geography. W.
Credits: 3
Leader's role in directing and coordinating individuals and small units in the execution of offensive and defensive tactical missions at company level; military geography, weapons and communications systems; intelligence gathering capabilities.

MIS 3404C Leadership Fundamentals and Tactics. Camp Preparation. S.
Credits: 3
Course is designed to improve students proficiency in those military subjects which are necessary to meet the minimum standards of technical competence and self-confidence required of a junior officer in the U.S. Army and to improve the students retention of subjects to be given during summer camp. Major emphasis is on various types of physical conditioning and non-tactical situations. Students must attend training sessions given at various times and locations.

MIS 3610C Methods of Instruction. F.
Credits: 3
An appreciation of the fundamental psychological concepts involved with methods of instruction and curriculum development as it is used in the military. Guest lecturers will provide the broadest possible background for students. Application opportunities will be afforded all students so that learned techniques can be practiced within a controlled environment.

MIS 4101 American Military History.
Credits: 1 to 4
Credit for MIS 4101 will be awarded upon the completion of AMH 4172, 4270, 4271, 4546, or 4547. Course descriptions are listed under the History Department.

MIS 4420C Leadership Seminar—Case Studies. W.
Credits: 3
A situational approach to leadership and management stressing group dynamics and role-playing. Principles and theories developed in MIS 3404 and 4430C coursework are applied by the student to conflict situations which occur in the tactical and non-tactical environment. Superior-subordinate and peer relationships are emphasized.

MIS 4421C Seminar In Military Leadership and Management. S.
Credits: 3
Analysis of selected leadership and management problems involved in unit administration, military justice and the Army Readiness Program. Discussion of the obligations of an officer on active duty, senior-subordinate relationships, and Army career planning.

MIS 4430C Staff Functions. F.
Credits: 3
A study of staff functions, the interaction between components of the Army, functions and controls of supporting units, logistics management and a general preview of career opportunities within the Army structure.

MILITARY SCIENCE — NAVY ROTC

INSTRUCTIONAL STAFF 1977-78

Smith, L.D., Capt., Chairman; Reid, L.R., Cdr.; Winer, P.D., Lt. Col.; Pace, A., Lt.; Horton, S.W., Lt.; Rowland, M.L., Lt.

NSC 1101L Naval Science Laboratory. F, W, S.
No Credits: (Two hours per week)
Drill, orientation, and information period.

NSC 1110 Principles of Naval Organization. F.
Credits: 3
An introduction to the structure and principles of naval organization. Organizational concepts are examined including lines of command and control to the various major, intermediate, and basic shore establishment and sea-based units of the Navy and Marine Corps. Also included is a basic introduction to the U.S. Naval Service and its history including the traditions and customs.

NSC 1121 Introduction to Naval Ships Systems I. W.
Credits: 3
The broad objectives of this comprehensive study are to learn the basic considerations for hull design of naval vessels, and to relate buoyancy, equilibrium, stability and the effects of flooding to the design characteristics of naval vessels, and to learn the basic principles of modern ship's systems.

NSC 1122 Introduction to Naval Ships Systems II. S.
Credits: 3
A continuation of NSC 1121, mostly oriented to ship's propulsion auxiliary systems and such topics as thermodynamics, electricity, and nuclear power and their interrelationships and interdependency of all of ship's systems to the successful mission of a ship.

NSC 2102L Naval Science Laboratory. F, W, S.
No Credits: (Two hours per week).
Drill, orientation, and information period.

NSC 2131 Naval Weapons Engineering 1. F.
Credits: 3
An introduction to the characteristics and principles of operation of naval weapons systems with emphasis on capabilities and system interdependency.

NSC 2132 Naval Weapons Engineering 2. W.
Credits: 3
A continuation of NSC 2131.

NSC 2140 Seapower and Maritime Affairs Seminar. S.
Credits: 2
A seminar to develop a working knowledge of an interest in seapower and maritime affairs. Discussions will include the forms and strengths, the economics and realities, and the power and influence of seapower.

NSC 3103L Naval Science Laboratory. F, W, S.
No Credits: (Two hours per week.)
Practical exercises dealing with the specifics of military organization and leadership.

NSC 3213 Naval Operations. S.
Credits: 3
A comprehensive study of ship employment and movements. Tactical formations and dispositions, relative motion, the maneuvering, board, and tactical plots are analyzed for force effectiveness and unity. The nautical Rules of the Road, including lights, signals, and procedures, are also studied.

NSC 3214C Navigation 1. F.
Credits: 3 (3 lecture hours, 1 lab hour.)
A comprehensive study of ship navigation. The course includes mathematical calculations, spherical triangulations, and the principles of electronic and inertial systems. Analysis of visual sights on terrestrial and celestial bodies is included along with study and practice with instruments, publications, charts, and report logs.

NSC 3215C Navigation II. W.
Credits: 3 (3 lecture hours, 1 lab hour.) Prereq: NSC 3214.
A continuation of NSC 3214 mostly oriented toward celestial navigation.

NSC 3221 Evolution of Warfare 1. F.
Credits: 3
A study of the art, concepts, and evolution of warfare. Exploration of the forms of warfare practiced by the great peoples of history; an understanding of historical continuity and of change during important periods; development of a basic sense of strategy from historical examples; the ability to demonstrate the alternatives to past military actions; an examination of the great captains and military organizations to discover the ingredients of their success; and examination of the impact of historical precedent on military thought and action. This course is a substitute for NSC 3214 for Midshipmen electing to enter the Marine Corps.

NSC 3222 Evolution of Warfare II. W.
Credits: 3
A continuation of NSC 3221 and a substitute for NSC 3215 for Midshipmen electing to enter the Marine Corps.

NSC 4104L Naval Science Laboratory. F, W, S.
No Credits: (Two hours per week.)
Practical exercises dealing with the specifics of Naval organizations and leadership.

NSC 4224 Amphibious Warfare I. F.
Credits: 3
A historical survey of the projection of seapower ashore. The course seeks to define the concept, explore its doctrinal origins, and trace its evolution as an element of naval policy during the twentieth century. The case study method is used alongside the theme of general historical continuity to develop an understanding of the relatively new and still maturing concept of amphibious warfare. (This course serves as a substitute for NSC 4230 for Midshipmen electing to enter the Marine Corps.)

NSC 4225 Amphibious Warfare II. W.
Credits: 3
A continuation of NSC 4224 and a substitute for NSC 4233 for Midshipmen electing to enter the Marine Corps.

NSC 4230 Naval Administration and Management. F.
Credits: 3
An introduction to the structure and principles of Naval administration and management. Current practices and the concepts underlying them are examined within the context of American social and industrial organization and practice. It includes lines of command and control; organiza-

tion for logistics, service, and support; functions and services of major components of the Navy and Marine Corps; and shipboard organization. Emphasis is placed on management and leadership responsibilities.

NSC 4233 Junior Naval Officer. W.
Credits: 3
The fundamental purpose of this course is to develop the student's appreciation of and familiarity with the duties and responsibilities of the Junior Naval Officer afloat with particular emphasis on the Division and Watch Officer areas.

NSC 4246 Nuclear Power Analysis. S.
Credits: 3
An in-depth review of nuclear physics, electrical theory, fluid mechanics, thermodynamics, and chemistry as applied to the Naval Nuclear Propulsion Program. Introduction to principles of radiation, radiological controls, shielding, materials of construction, and propulsion plant operation. This course is intended primarily for Midshipmen entering the Nuclear Power Program.

NSC 4247 Aviation Systems Analysis. S.
Credits: 3
An in-depth review of aviation related fields to include aviation physiology, survival, meteorology, aerodynamics, aircraft systems, and navigation as applied to the Naval Flight Program.

NSC 4248 Surface Systems Analysis. S.
Credits: 3
The purpose of this course is to prepare surface warfare officer designates for Junior Officer assignments in Surface Warfare units and provide a practical foundation for attainment of qualification as Surface Warfare Officers. Upon completion of this course the student will be provided elementary skills and knowledge enabling him to serve as a Junior Officer of the Watch, Combat Information Center Watch Officer, and Inport Watch Officer.

MUSIC
College of Fine Arts

INSTRUCTIONAL STAFF 1977-78

Budd, A. Udell, Chairman; Adams, E.A.; Bodine, W.R.; Bowles, R.W.; Brask, W.J.G.; Dorman, P.O.; Fouse, S.B.; Grigsby, J.R.; Hale, J.P.; Henderson, R.M.; Jaeger, I.C.; Keister, E.L.; Kitts, J.S.; Kushner, D.Z.; Langford, R.G.; Ostoich, M.S.; Penland, A.C., Jr.; Poole, R.; Small, T.S.; Sterrett, D.E.; Troupin, E.C.; Tyler, V.; White, C.B.; Wickes, F.B.; Wilmot, D.L.; Zumbro, J.M.

Degree programs in music include: the Bachelor of Music and Bachelor of Arts, in which degrees a student may major in music theory and composition, history and literature, church music, or applied music in piano, voice, organ, harpsichord, or in any orchestral instrument; the Bachelor of Music Education degree; the Master of Fine Arts; and the Master of Education degree with a major in music education. A prospective music major should consult the Department of Music adviser at his earliest opportunity, obtain detailed outlines of curricula and requirements, and make application for admission to music major status.

Music Performance Scholarships are available. Courses offered in the Department of Music are divided into five areas: Theory; History and Literature; Applied Music; Music Education; Ensemble.

Enrollment is open to all qualified University students — those preparing for a professional goal in music and those seeking a musical literacy for its cultural value.

GRADUATE COURSES

The Master of Fine Arts degree in music (emphases on music history, literature and criticism, music theory and composition, applied music, sacred music, and conducting) is offered in the College of Fine Arts.

The Department of Music cooperates with the College of Education in offering courses leading to the following degrees: Master of Education in music education (non-thesis degree); Master of Arts in Education in music education (thesis degree); Specialist in Education; Doctor of Education in college music teaching (emphasis in music education); Doctor of Philosophy in college music teaching (emphases in music history, literature and criticism, music theory and composition, performance practices, and music education).

Rotating Topics courses at the graduate level include the following: MUH 6930, 7930. Topics in Musicology (History of American Music, Seminar in Romantic Music, Seminar in Renaissance Music, History of Opera, etc.); MUL 6931, 7931. Topics in Music Literature (Symphonic Literature, Piano Literature, Romantic Music Literature, Contemporary Music Literature, etc.); MUT 6930, 7930. Topics in Music Theory (Analytic Techniques, Contemporary Compositional Techniques, History of Music Theory, etc.); and MUE 6932, 7932. Topics in Music Education (Supervision and Administration of Music Education Programs, Psychology of Music, The Instrumental Curriculum, The Elementary School Music Curriculum, The Secondary School General Music Curriculum, etc.).

APPLIED MUSIC

GENERAL POLICY

Applied Music courses, which are studio and class lessons in voice and musical instruments, are offered in voice, piano, organ, violin, viola, violoncello, string bass, flute, oboe, clarinet, bassoon, French horn, trumpet, trombone, euphonium, tuba, percussion, saxophone, harp, harpsichord, recorder, and historical instruments. These courses are primarily for music majors. They are open to non-majors by special audition only.

The student registering for the first time for courses in Applied Music reports to the Chairman of the Department of Music, who designates a faculty member to audition and/or consult with the student and assign the student to the proper applied music course number.

The student should obtain from the Department of Music the publication, "Applied Music Study at the University of Florida."

S-U Grades option and auditing of courses in Applied Music are not permitted.

Freshman Courses (1000 level) emphasize basic techniques. A student normally takes one of these courses for three quarters.

Sophomore Courses (2000 level) emphasize repertory and mastery of the basic techniques of the performing medium. A student normally takes one of these courses for three quarters.

Junior Courses (3000 level) and Senior Courses (4000 level) are for advanced study. A student normally takes one of these courses for three quarters. Recitals must be presented at the University of Florida.

The PERFORMER'S CERTIFICATE will be awarded at the discretion of the faculty to students who complete the graduation requirements of the Senior Courses.

Music: Applied Brasses

MVB 1411, 2421, 3431, 4441 Trumpet. F, W, S, SS.
Credits: 3 each term.

MVB 1412, 2422, 3432, 4442 French Horn. F, W, S, SS.
Credits: 3 each term.

MVB 1413, 2423, 3433, 4443 Trombone. F, W, S, SS.
Credits: 3 each term.

MVB 1414, 2424, 3434, 4444 Euphonium.
Credits: 3 each term.

MVB 1415, 2425, 3435, 4445 Tuba. F, W, S, SS.
Credits: 3 each term.

Music: Applied Keyboard

MVK 1411, 2421, 3431, 4441 Piano. F, W, S, SS.
Credits: 3 each term.

MVK 1412, 2422, 3432, 4442 Harpsichord. F, W, S, SS.
Credits: 3 each term.

MVK 1413, 2423, 3433, 4443 Organ. F, W, S, SS.
Credits: 3 each term.

MVK 2111, 2121 Piano Skills. F, W, S, SS.
Credits: 1 each course.
1 hour of class instruction per week. Open only to music majors; required of all music majors until piano proficiency examination has been passed.

Music: Applied Other Instruments

MVO 1413, 2423, 3433, 4443 Historical Instruments. F, W, S, SS.
Credits: 3 each term.

MVO 1414, 2424, 3434, 4444 Recorder. F, W, S, SS.
Credits: 3 each term.

MVO 6250, 7260 Secondary Applied Music. F, W, S, SS.
Credits: 3 each term.

MVO 6460, 7470 Applied Music. F, W, S, SS.
Credits: 3 each term.

Music: Applied Percussion

MVP 1411, 2421, 3431, 4441 Percussion. F, W, S, SS.
Credits: 3 each term.

Music: Applied Strings

MVS 1411, 2421, 3431, 4441 Violin. F, W, S, SS.
Credits: 3 each term.

MVS 1412, 2422, 3432, 4442 Viola. F, W, S, SS.
Credits: 3 each term.

MVS 1413, 2423, 3433, 4443 Cello. F, W, S, SS.
Credits: 3 each term.

MVS 1414, 2424, 3434, 4444 String Bass. F, W, S, SS.
Credits: 3 each term.

MVS 1415, 2425, 3435, 4445 Harp. F, W, S, SS.
Credits: 3 each term.

MVS 4145 Harp Skills. F, W, S.
Credits: 2; Prereq: Permission of instructor.
The harp in orchestra and chamber music with emphasis on writing for the instrument. For prospective conductors, arrangers, composers.

Music: Applied Voice

MVV 1411, 2421, 3431, 4441 Voice. F, W, S, SS.
Credits: 3 each term.

Music: Applied Woodwinds

MVW 1411, 2421, 3431, 4441 Flute. F, W, S, SS.
Credits: 3 each term.

MVW 1412, 2422, 3232, 4442 Oboe. F, W, S, SS.
Credits: 3 each term.

MVW 1413, 2423, 3433, 4443 Clarinet. F, W, S, SS.
Credits: 3 each term.

MVW 1414, 2424, 3434, 4444 Bassoon. F, W, S, SS.
Credits: 3 each term.

MVW 1415, 2425, 3435, 4445 Saxophone. F, W, S, SS.
Credits: 3 each term.

Church Music

MUR 3401 Organ Design and Literature. F.
Credits: 4; Primarily for organists.
Church architectural design and acoustics; liturgical forms; liturgical year; service music; service playing.

MUR 4801 Music in Worship. W.
Credits: 4; Prereq: MUH 3211, 3212, 3213 or equivalent.
Primarily for church music directors. Hymnology; choral literature for specific contexts; church music administration.

Composition

MUC 3201, 3202 Composition, 1, 2. F, W.
Credits: 4 each course; Prereq: Permission of instructor.
Composition in simple and extended forms, supplemented by analysis of selected compositions from the standard repertoire.

MUC 4301 Introduction to Electronic Music. W, SS.
Credits: 4; Prereq: Permission of instructor.
Use of the synthesizer and tape recorder in composition.

GRADUATE COURSE

MUC 6401 Composition of Electronic Music. S.
Credits: 4

Conducting

MUG 4101, 4102 Conducting 1, 2. F, W, S, SS.
Credits: 4 each course; Prereq: Twelve credits in one area of applied music or permission of the instructor.
Basic techniques of choral and instrumental conducting.

MUG 4201 Choral Conducting. W, SS.
Credits: 4; Prereq: 12 credits in 1 area of applied music, MUT 2248 and MUG 4101, or permission of instructor.
Basic techniques of choral conducting, score analysis, interpretation, and development of ensemble tonal quality.

Music: Education

MUE 2402 Music Skills. F, W, S, SS.
Credits: 4
Fundamentals of music needed by the classroom teacher for teaching music in the elementary school. Not open to Freshmen. Students with sufficient background in music may exempt the course by examination.

MUE 2403 Instruments for General Music, K-12. F, SS.
Credits: 2; Open only to music education majors, or permission of instructor.
A skills course; recorder, guitar, and Orff instruments. Maximum: 6 credits.

MUE 2431 Voice Skills. F, W, S, SS.
Credits: 2; Open only to music majors.
Required of all music education majors. May be repeated for credit with departmental approval. Maximum: 6 credits.

MUE 2440 String Skills. F, W, S.
Credits: 2; Open only to music majors.
Required of all music education majors. May be repeated for credit with departmental approval. Maximum: 6 credits.

MUE 2450 Woodwind Skills. F, W, S.
Credits: 2; Open only to music majors.
Required of all music education majors. May be repeated for credit with departmental approval. Maximum: 6 credits.

MUE 2460 Brass Skills. F, W, S.
Credits: 2; Open only to music majors.
Required of all music education majors. May be repeated for credit with departmental approval. Maximum: 6 credits.

MUE 2470 Percussion Skills. F, W, S.
Credits: 2; Open only to music majors.
Required of all music education majors. May be repeated for credit with departmental approval. Maximum: 6 credits.

MUE 3093 Music in the Field of Recreation. W.
Credits: 4
The various uses of music in the field of recreation.

MUE 3313 Music in Elem. Schools. W.
Credits: 5; Prereq: MUE 2402.
Fundamental principles and procedures of music education in elementary school.

MUE 3320 Music Education in the Middle School. SS.
Credits: 5; Prereq: MUE 2402 or equivalent.
Fundamental principles of music education in the middle school.

MUE 3330 Music Ed. Secondary 7-12. S.
Credits: 5; Prereq: MUE 3310 or equivalent.
Fundamental principles and procedures of music education in the secondary school.

MUE 3401 Music for the Elementary Child. F, W, S, SS.
Credits: 5; Prereq: MUE 2402 or equivalent.
Helps meet state certification requirements for elementary classroom teachers. Function of elementary school music in aiding the developmental growth of children.

MUE 4343 Orchestra Materials and Administration. W, SS.
Credits: 4; Prereq: MUE 3330 or permission of instructor.
Examination, evaluation and techniques of using string and orchestra materials in the music program. Fundamental principles of organization and administration of the orchestra program.

MUE 4404 Elementary School Music Materials and Administration.
Credits: 4
Examination, evaluation and techniques of using materials in the elementary music program. Fundamental principles and problems of organization and administration of this program.

MUE 4411 Vocal Music Materials and Administration. W, SS.
Credits: 4; Prereq: MUE 3330 or permission of instructor.
Examination, evaluation and techniques of using vocal materials in secondary music program. Fundamental principles and problems of organization and administration of this program.

MUE 4412 Instrumental Music Materials and Administration. W, S.
Credits: 4; Prereq: MUE 3330 or permission of instructor.
Examination, evaluation, and techniques of using instrumental materials in the music program. Fundamental principles and problems of organization and administration of this program.

MUE 4480 Marching Band Techniques. S, SS.
Credits: 4
Examination, evaluation, and practical application of marching band techniques for the high school and college band director.

GRADUATE COURSES

MUE 6143 Music in the Schools. F, W, S, SS.
Credits: 2 to 9

MUE 6396 Methods of Research in Music Education. F, SS.
Credits: 4

MUE 6932, 7932 Topics in Music Education. F, W, S, SS.
Credits: 4 each

Music: History/Musicology

MUH 3211 Survey of Music History 1. F.
Credits: 4; Prereq: MUL 2111 or permission of instructor.
Antiquity, Middle Ages, and Renaissance.

MUH 3212 Survey of Music History 2. W.
Credits: 4; Prereq: MUL 2111 or permission of instructor.
Baroque and Classic periods.

MUH 3213 Survey of Music History 3. S.
Credits: 4; Prereq: MUL 2111 or permission of instructor.
Romantic and contemporary periods.

MUH 3541 Latin-American Music. S.
Credits: 4; Prereq: MUL 2011 or equivalent.
Representative works of the leading composers of Latin America, including Chavez, Villa-Lobos, Guarnieri, Sas, Williams, UribHolguin Calvalho, Santa Cruz, Delgadillo, and Paz.

MUH 4116 History of Jazz. S.
Credits: 4
From African, Latin-American, and Black-American sources, through contemporary development.

MUH 4331 Renaissance Literature. W.
Credits: 4; Prereq: MUL 2111 or equivalent.
Instrumental music, mass, madrigal, motet, and vocal polyphony from 1400 to 1600.

MUH 4501 Non-Western Musics. W.
Credits: 4
Introduction to musics of non-western cultures in comparison with music of Western European Civilizations; the nature of music and the realm of ethnomusicology.

MUH 4561 Music of Black Americans. F.
Credits: 4
African heritage; Colonial Period to the present, musical literature, performers, composers. Open as an elective to all students.

GRADUATE COURSES

MUH 6050 Graduate Music History Review.
Credits: 4

MUH 6930, 7930 Topics in Musicology. F, S.
Credits: 4 each

Music Literature

MUL 2011 Introduction to Music Listening. F, W, S, SS.
Credits: 4
A fundamental course open to all students (non-music majors) as an elective. Concert attendance, listening to records, reading, and discussion.

MUL 2111 Musical Styles. W, SS.
Credits: 4
Styles, forms, underlying ideas, rhythmic, melod-

ic, and harmonic characteristics of each musical era related to the prevailing general culture. For music majors only, or with permission of instructor.

MUL 2112 Masterworks of Music. W.
Credits: 4
Works of master composers in the various stylistic periods, 1600 to the present; Bach and Handel; Mozart and Haydn; Beethoven; the nineteenth and early twentieth century. Open as an elective to all students (non-music majors); may follow MUL 2011 or may be taken separately.

MUL 2113 Musical Structures. S.
Credits: 4
Symphonies, symphonic poems, opera, oratorio and solo and chamber works. Open as an elective to all students (non-music majors); may follow MUL 2011 and MUL 2111 or may be taken separately.

MUL 3341 Baroque Literature. S.
Credits: 4; Prereq: MUL 2011 or equivalent.
Compositions of Monteverdi, Gabrieli, Schutz, Buxtehude, Bach, Handel, and others.

MUL 3351 Classic Literature. F.
Credits: 4; Prereq: MUL 2011 or equivalent.
Music of the major composers of the Classic period, with special emphasis on Haydn, Mozart and Beethoven.

MUL 3362 Romantic Vocal Literature. F.
Credits: 4; Prereq: MUL 2011 or equivalent.
Lieder, opera, music drama, oratorio, and vocal chamber music and Beethoven to Richard Strauss; analysis of form and style.

MUL 4361 Romantic Instrumental Literature. W.
Credits: 4; Prereq: MUL 2011 or equivalent.
Beethoven to Richard Strauss. Symphony, tone poem, chamber music, and piano works.

MUL 4371 Contemporary Literature. S.
Credits: 4; Prereq: MUL 2011 or equivalent.
Twentieth-century music literature, including works of Debussy, Ravel, Stravinsky, Schoenberg, Webern, Berg, Hindemith, Bartok, Copland, Sessions, Boulez, and Stockhausen.

MUL 4811 The Music of J.S. Bach. SS.
Credits: 4
This course will survey the works of Bach with special emphasis on the historical sources of his choral and instrumental styles and detailed study of a selection of his chief works.

MUL 4813 The Music of W.A. Mozart. S.
Credits: 4
The music, life and times of Mozart.

GRADUATE COURSES

MUL 6931, 7931 Topics in Music Literature. W, SS.
Credits: 4 each

Ensembles

Ensemble Credit. Six ensemble credit hours may be applied toward most non-music Bachelor degrees. In each term music majors must register for, and participate in, ensembles appropriate to their skills as required by the various music curricula. Each music major should have both large and chamber ensemble experience in his undergraduate career, as recommended by the individual applied music instructor. Lower Division students register for a 1000-level number; Upper Division students register for a 3000-level number. For ensemble participation, graduate students register for MUN 6000 Graduate Ensemble.

††Grading is on a S-U basis only.

MUN 1100, 3100 University Band. F, W, S, SS.
Credits: 1 each; Prereq: Permission of conductor.
Performance of standard band literature.

MUN 1210, 3210 University Orchestra. F, W, S, SS.
Credits: 1 each; Prereq: Permission of conductor.
Standard orchestra literature.

MUN 1310, 3310 University Choir. F, W, S, SS.
Credits: 1 each; Prereq: Permission of conductor.
An advanced choral group providing specialized study performance opportunities for vocally qualified students.

MUN 1320, 3320 Women's Chorale. F, W, S.
Credits: 1 each; Prereq: Previous choral or instrumental experience and permission of conductor.
Vocal training and public performance of standard male chorus repertoire.

MUN 1330, 3330 Men's Glee Club. F, W, S.
Credits: 1 each; Prereq: Previous choral or instrumental experience and permission of conductor.
Vocal training and public performance of standard male chorus repertoire.

MUN 1460, 3460 Chamber Music Ensembles. F, W, S, SS.
Credits: 1 each; Prereq: Permission of director.

MUN 1710, 3710 Jazz Bands. F, W, S, SS.
Credits: 1 each; Prereq: Permission of director.
Standard and experimental jazz ensembles. A jazz laboratory.

MUN 3340 University Chamber Singers. F, W, S, SS.
Credits: 1; Membership by audition and permission of instructor.
Study and performance of early and contemporary vocal literature.

MUN 3490 Renaissance Ensemble. F, W, S, SS.
Credits: 1 Prereq: Permission of director.
Study and performance of Renaissance instrumental music on authentic replicas of Renaissance instruments.

GRADUATE COURSES

MUN 6000 Graduate Ensemble. F, W, S, SS.
Credits: 1

Opera/Musical Theatre

MUO 3501 Opera Workshop. F, W, S, SS.
Credits: 1; Prereq: Permission of director.
Study and performance of works from opera and operetta.

For additional courses in music education, see course listings, MUE 6080, 6146, 6147, 6406, 6416, 7938.

Music Theory

MUT 1111, 1112, 1113 Theory of Music 1, 2, 3. F, W, S.
Credits: 3 each course; Coreq: MUT 1241, 1242, 1243, MUE 2431, MVK 2111, 2112. Registration in applied music study; and admission to music major status.
Rhythms, intervals, motifs, phrases, melodies, chords and chord progressions in the standard clefs through listening, playing, singing and writing. Chord study includes primary and secondary triads in root position and inversions, nonharmonic tones and diatonic seventh chords.

MUT 1241, 1242, 1243 Theory of Music Lab 1, 2, 3. F, W, S.
Credits: 1 each course; Coreq: MUT 1111, 1112, 1113.
Sight-singing and dictation.

MUT 2116, 2117, 2118 Theory of Music 4, 5, 6. F, W, S.
Credits: 3 each course; Coreq: MUT 2246, 2247, 2248, MVK 2113, 2114, 2115.
Modulation, secondary dominants, diminished sevenths, neapolitan and augmented sixths, chords of the ninth, eleventh and thirteenth.

MUT 2246, 2247, 2248 Theory of Music Lab 4, 5, 6. F, W, S.
Credits: 1 each course; Coreq: MUT 2116, 2117, 2118.
Sight-singing and dictation.

MUT 3321, 3322 Instrumentation and Arranging 1, 2. W, S.
Credits: 4 each course; Prereq: MUT 2118 or equivalent.
Scoring for the instruments of the orchestra and band, singly and in various combinations.

MUT 3611 Form and Analysis 1. W.
Credits: 4; Prereq: MUT 2118.
Analysis of the form and harmony employed in standard musical compositions through the classic period.

MUT 3612 Form and Analysis 2. S.
Credits: 4; Prereq: MUT 2118.
Analysis of music of the nineteenth and twentieth centuries.

MUT 4411 Modal Counterpoint. F, S.
Credits: 4; Prereq: MUT 2118.
Free and strict counterpoint in the sixteenth century modal style through listening, reading, playing, singing, and writing.

MUT 4421 Tonal Counterpoint. W, SS.
Credits: 4; Prereq: MUT 2118.
Counterpoint in the 18th-century style through listening, reading, playing, singing, and writing.

MUT 4641 Jazz Improvisation. S.
Credits: 2; Prereq: Permission of instructor.

GRADUATE COURSES

MUT 6051 Graduate Music Theory Review.
Credits: 4

MUT 6751 Pedagogy of Music Theory. F, W, S, SS.
Credits: 4

MUT 6930, 7930 Topics In Music Theory. F, W, S, SS.
Credits: 4 each

Music

MUS 4201, 4202 Language and Diction for Singers 1, 2.
Credits: 1 each course; Prereq: MUV 1411.
1 hour of class instruction per week. Open to students studying voice. Required of all music education majors whose principal applied music is voice.

MUS 4905 Projects and Problems in Music. F, W, S, SS.
Credits: 5
Individual work in music and music education. May be repeated for credit with change of content.

GRADUATE COURSES

MUS 5665 Music Criticism. SS.
Credits: 4; Prereq: MUL 2011 or equivalent or permission of instructor.

MUS 6716 Methods of Musical Research and Bibliography. F, SS.
Credits: 4

MUS 6905, 7905 Projects and Problems in Music. F, W, S, SS.
Credits: 5 each

MUS 6910 Supervised Research. F, W, S, SS.
Credits: 1 to 5††

MUS 6940 Supervised Teaching. F, W, S, SS.
Credits: 1 to 5††

MUS 6971 Master's Research. F, W, S, SS.
Credits: 1 to 15††

MUS 6973 Individual Project. F, W, S, SS.
Credits: 1 to 15

NUCLEAR ENGINEERING SCIENCES
College of Engineering

INSTRUCTIONAL STAFF 1977-78
Ohanian, M.J., Chairman; Campbell, H.D.; Carroll, E.E.; Dalton, G.R.; Diaz, N.J.; Ellis, W.H.; Kylstra, C.D.; Roessler, G.S.; Schneider, R.T.; Schoessow, G.J.; Wethington, J.A., Jr.; Dugan, E.T.

Engineering: Nuclear

ENU 3002 Survey of Nuclear Technology in Modern Life. F, W, S, SS.
Credits: 3; 3-1 hr lec; Prereq: Upper division standing or consent of instructor.
The impact of nuclear technology on our society. Fundamentals of nuclear fission and fusion processes with applications.

ENU 3012 History of Nuclear Energy. F, S.
Credits: 4; 4-1 hr lec; Prereq: Exposure to modern European and American history plus a year of natural science.
The evolution of nuclear weapons in World War II, change from military to civilian control, and maturation of nuclear power.

ENU 4101 Principles of Nuclear Reactors. F, S.
Credits: 4; 4-1 hr lec; 1-1 hr disc; Prereq: Senior standing or above.
Introduction to nuclear reactor concepts, instrumentation, operation, fuels, materials, shielding, and power generation for the non-nuclear engineering major.

ENU 4103 Introduction to Nuclear Engineering 1. W, SS.
Credits: 4; 4-1 hr lec; Coreq: PHY 3123.
Elementary study of neutron reactions, neutron diffusion, multiplication factors for simple nuclear reactors, and time dependent behavior of nuclear systems.

ENU 4104 Introduction to Nuclear Engineering 2. S, SS.
Credits: 4; 4-1 hr lec.
Continuation of ENU 4103. Study of elementary reactor control and instrumentation, radiation effects, nuclear materials, biological effects of radiation, health regulations.

ENU 4134 Thermodynamics, Heat and Mass Transfer in Nuclear Systems. F.
Credits: 4; 4-1 hr lec; Prereq: EML 3100.
Thermodynamic aspects of nuclear power, reactor heat generation and removal, and heat transfer and fluid flow.

ENU 4144 Nuclear Power Reactor Systems. W.
Credits: 4; 4-1 hr lec.
The general design criteria for nuclear power reactors. The systems and major components of each system of different types of nuclear reactors. Nuclear reactor fuels, quality assurance, reactor licensing.

ENU 4192 Nuclear Power Reactor Design. S.
Credits: 4; 4-1 hr lec; Prereq: Senior standing or above.
Design of major systems and components of several types of nuclear power reactors.

ENU 4304 Applications of Nuclear Radiation and Energy 1. W.
Credits: 4; 4-1 hr lec; 1-1 hr disc.
The use of radioisotopes and ionizing radiation in solving engineering and research problems. The use of nuclear explosives for peaceful purposes will also be examined.

ENU 4405 Nuclear Processing and Separations. W.
Credits: 4; 4-1 hr lec; Prereq: Senior standing or above.
Chemical processing of fertile and fissile materials and irradiated fuels, changes in composition and reactivity during fuel irradiation, nuclear reactors and the chemical plants associated with them, waste disposal.

ENU 4505L Nuclear Engineering Laboratory 1. S, SS.
Credits: 4; 2-1 hr lec; 2-4 hr lab; Prereq: ENU 4104.
A study of the experimental procedures used in reactor operation, personnel monitoring, radiation detection devices and the statistics of nuclear counting systems.

ENU 4601 Applications of Nuclear Radiation and Energy 2. S.
Credits: 3; 3-1 hr lec; 1-3 hr lab; Prereq: PHY 3123.
The application of radioactive materials and ionizing radiation for measurements in chemistry, physics, engineering, geology, and astrophysics.

ENU 4605 Interaction of Radiation with Matter. W, SS.
Credits: 4; 4-1 hr lec; Prereq: PHY 3123.
The processes by which radiation interacts with matter and applications in research, industry, and medicine.

ENU 4612 Nuclear Instrumentation Systems. F.
Credits: 4; 3-1 hr lec; 1-3 hr labs; Prereq: Senior standing or above.
Basic operational principles of radiation detection systems; counting circuitry and systems for radiation protection, nuclear reactor safety and control.

ENU 4704 Advanced Concepts for Nuclear Energy. F.
Credits: 4; 4-1 hr lec; 1-1 hr disc.
A basic introduction to plasmas is given with emphasis on engineering applications. The areas to be covered are: thermonuclear fusion, lasers, gas discharges, arcs, MHD power generation, and thermionic energy conversion.

ENU 4905 Special Problems in Nuclear Engineering Sciences. F, W, S, SS.
Credits: 1 to 6; 3 hr lab; Prereq: Recommendation of Department Chairman.
Individually selected problems or projects in the student's major field of engineering study. May be repeated up to maximum of 12 credits.

ENU 4949 Coop Work Experience Sciences. F, W, S, SS.
Credits: 1 to 5; 3 hr lab; Prereq: 4EG classification: one term of industrial employment, including extra work according to a preapproved outline.
Practical engineering work under industrial supervision, as set forth in the College of Engineering Regulations.

GRADUATE COURSES

ENU 5005 Fundamentals of Reactor Engineering.
Credits: 4

ENU 5176L Principles of Nuclear Reactor Operations.
Credits: 4

ENU 5186 Reactor Fuel Cycles.
Credits: 3

ENU 5195 Nuclear Power Reactors 1.
Credits: 4

ENU 5306 Radioisotope Theory and Techniques.
Credits: 5

ENU 5414 Isotope Separation.
Credits: 3

ENU 5615L Nuclear Radiation Detection and Instrumentation.
Credits: 4

ENU 5625 Bionucleonics.
Credits: 3

ENU 5626 Radiation Biology.
Credits: 5

ENU 5629 Radiation Biology Laboratory.
Credits: 2

ENU 6106 Reactor Analysis 1.
Credits: 3

ENU 6107 Reactor Analysis 2.
Credits: 3

ENU 6108 Advanced Reactor Analysis.
Credits: 3

ENU 6117 Neutron Transport Theory.
Credits: 3

ENU 6126 Fundamentals of Reactor Kinetics.
Credits: 4

ENU 6127 Advanced Reactor Kinetics.
Credits: 3

ENU 6147 Reactor Technology 1.
Credits: 4

ENU 6148 Reactor Technology 2.
Credits: 4

ENU 6167 Principles of Fast Reactors.
Credits: 3

ENU 6168 Fast Reactor Analysis.
Credits: 3

ENU 6197 Nuclear Power Reactors 2.
Credits: 4

ENU 6210 Computer Programs in the Nuclear Industry.
Credits: 4

ENU 6241 Numerical Methods of Reactor Analysis.
Credits: 4

ENU 6257 Nuclear Data Acquisition and Processing.
Credits: 4

ENU 6307L Radioactive Tracer Instrumentation and Methodology.
Credits: 4

ENU 6516L Nuclear Engineering Laboratory 2.
Credits: 4

ENU 6517L Nuclear Engineering Laboratory 3.
Credits: 4

ENU 6627 Radiological Physics.
Credits: 4

††Grading is on a S-U basis only.

NURSING

ENU 6636 Fundamental Aspects of Reactor Shielding.
Credits: 3

ENU 6646 Field Problems in Radiation Control.
Credits: 1 to 3

ENU 6656L Medical Radiation Instrumentation and Dosimetry.
Credits: 4

ENU 6657 Nuclear Medicine Instrumentation and Procedure.
Credits: 5

ENU 6707 Direct Energy Conversion.
Credits: 1

ENU 6717 Thermonuclear Fusion.
Credits: 3

ENU 6725 Plasma Spectroscopy.
Credits: 4

ENU 6745 Advanced Plasma Theory.
Credits: 4

ENU 6905 Individual Work.
Credits: 1 to 6

ENU 6910 Supervised Research.
Credits: 1 to 5††

ENU 6935 Nuclear Seminar.
Credits: 1

ENU 6936 Special Projects in Nuclear Engineering Sciences.
Credits: 1 to 9

ENU 6937 Special Topics in Nuclear Engineering Sciences.
Credits: 1 to 9

ENU 6940 Supervised Teaching.
Credits: 1 to 5††

ENU 6971 Master's Research.
Credits: 1 to 15††

ENU 7980 Doctoral Research.
Credits: 1 to 15††

NURSING
College of Nursing

INSTRUCTIONAL STAFF 1977-78

Urey, B.I., Dean; Anderson-Shanklin, G.C.; Baker, A.S.; Barton, P.H.; Bodo, T.L.; Chiras, G.L.; Clunn, P.A.; Cobb, B.A.; Courage, M.S.; Davis, J.H.; Dougherty, M.C.; Dykes, E.E.; Frauman, S.A.; Godbey, K.L.; Guy, J.A.; Harris, F.S.; Hayes, C.V.; Hilliard, M.E.; Irving, J.A.; Keeter, A.C.; Knowles, L.N.; Mon, B.E.; Moon, S.G.; Nichols, M.A.; Pafford, V.M.; Paul, P.B.; Pierce, P.M.; Reilly, C.J.; Rigdon, I., Rohloff, S.D.; Schilling, L.S.; Scully, G.L.; Snider, M.J.; Strozier, V.R.; Summey, J.R.; Sypert, N.S.; Taylor, C.E.; Turner, J.G.; Williams, D.D.; Willis, S.E.; Wilson, J.M.; Wilson, M.E.

Nursing

NUR 4905 Individual Study. F, W, S, SS.
Credits: 1 to 4; Prereq: 11 hours of upper division nursing courses or consent of instructor.
Individual Study. Qualified students may choose particular care problems for study. Individual study may be extended for additional credit by permission of the college.

NUR 4930 Special Topics. F, W, S, SS.
Credits: 4; Prereq: 11 hours of upper division nursing courses or consent of instructor.
At least one nursing course will be offered each quarter covering a selected topic. Prior to registration, students should contact the Dean's Office, College of Nursing for special topics offered.

NUR 4943C Nursing Practicum. F, W, S, SS.
Credits: 10; All courses in the nursing major are prerequisite to this course
The student will practice as nurse clinician in approved settings under faculty supervision.

††Grading is on a S-U basis only.

GRADUATE COURSES

NUR 5940C Internship in Professional Nursing.
Credits: 4; Maximum of 12 credits.

NUR 6150C Theory & Practice in Women's & Infants' Nursing 1.
Credits: 4

NUR 6151C Theory & Practice in Women's & Infants' Nursing 2.
Credits: 4

NUR 6152C Theory & Practice in Women's & Infants' Nursing 3.
Credits: 4

NUR 6164C Theory and Practice in Child Health 1.
Credits: 4

NUR 6165C Theory and Practice in Child Health 2.
Credits: 4

NUR 6166C Theory and Practice in Child Health 3.
Credits: 4

NUR 6450C Primary Care Practice 1.
Credits: 8

NUR 6451C Primary Care Practice 2.
Credits: 8

NUR 6460C Family Health Nursing Practice 1.
Credits: 4

NUR 6461C Family Health Nursing Practice 2.
Credits: 4

NUR 6462C Family Health Nursing Practice 3.
Credits: 4

NUR 6550C Theory and Practice in Adult Health Care 1.
Credits: 4

NUR 6551C Theory and Practice in Adult Health Care 2.
Credits: 4

NUR 6552C Theory and Practice in Adult Health Care 3.
Credits: 4

NUR 6905 Individual Study.
Credits: 1 to 5

NUR 6910 Supervised Research.
Credits: 1 to 5††

NUR 6931 Special Topics in Nursing.
Credits: 2 to 4

NUR 6940 Supervised Teaching.
Credits: 1 to 5††

NUR 6945 Practicum in Nursing.
Credits: 4 to 12

NUR 6948 Residency.
Credits: 4; Maximum of 12 credits.

NUR 6971 Master's Research.
Credits: 1 to 15††

Nursing Universals

DYNAMICS OF HUMAN BEHAVIOR SERIES. NUU 3160C, NUU 3161C, NUU 3162C. These human behavior courses are designed to provide the student with an understanding of the healthy state of man, man's reciprocal relationship to his environment, and the mechanism man uses to cope with himself and his environment.

NUU 3160C Dynamics of Human Behavior 1. F, W, S, SS.
Credits: 4; Prereq: Admission to the College of Nursing. Coreq: NUU 3210C.
Introduction to human behavior with emphasis on the interaction between the individual and his environment.

NUU 3161C Dynamics of Human Behavior 2. F, W, S, SS.
Credits: 5; Prereq: NUU 3160C, NUU 3210C, Coreq: NUU 3220C, 3431.
Continuation of the series. Emphasis on human behavior at selective stages of life.

NUU 3162C Dynamics of Human Behavior 3. F, W, S, SS.
Credits: 5; Prereq: NUU 3161C, NUU 3220C; Coreq: NUU 3221C, 3431.
Continuation of the series.

FIRST NURSING PROCESS SERIES NUU 3210C, NUU 3220C, NUU 3221C. This series of courses is designed to provide the student with experience utilizing the nursing process in the promotion and maintenance of health for selected individuals and families. Emphasis will be directed toward assessment, planning, implementation and evaluation. Nursing Process will be directed toward the biological, affective and cognitive domains of man.

NUU 3210C Nursing Process 1. F, W, S, SS.
Credits: 6; Prereq: Admission to the College of Nursing. Coreq: NUU 3160C.
Introduction to the nursing process with emphasis on assessment.

NUU 3220C Nursing Process 2. F, W, S, SS.
Credits: 8; Prereq: NUU 3160C, 3210C; Coreq: NUU 3161C, 3431.
Continuation of the series. Emphasis on maintenance of health.

NUU 3221C Nursing Process 3. F, W, S, SS.
Credits: 8; Prereq: NUU 3161C, NUU 3220C; Coreq: NUU 3162C, NUU 3431.
Continuation of the series. Emphasis on interdependent nursing actions to maintain health.

NUU 3431 Professional Socialization 1. F, W, S, SS.
Credits: 2; Prereq: NUU 3160C, 3210C; Coreq: NUU 3161C, 3220C.
Introduction to the role of the professional nurse and the relationship of nursing to the social structure.

HEALTH PROBLEMS SERIES NUU 4500C, NUU 4501C, NUU 4502C. This series deals with the analysis of major national health problems. These courses stress the impact of these problems on individuals, families and society, as well as the impact nursing has upon health problems. Health problems will be explored under several defined categories, such as developmental, environmental and degenerative.

NUU 4500C Health Problems 1. F, W, S, SS.
Credits: 5; Prereq: NUU 3162C, NUU 3221C; Coreq: NUU 4225C.
Introduction to and analysis of major health problems.

NUU 4501C Health Problems 2. F, W, S, SS.
Credits: 5; Prereq: NUU 4500C, 4225C. Coreq: NUU 4226C.
Continuation of the series.

NUU 4502C Health Problems 3. F, W, S, SS.
Credits: 5; Prereq: NUU 4501C, NUU 4226C; Coreq: NUU 4227C, NUU 4432.
Continuation of the series.

SECOND NURSING PROCESS SERIES. NUU 4225C, NUU 4226C, NUU 4227C. This series of courses is designed to provide the student with experience in utilizing the nursing process in selected health care problems.

NUU 4225C Nursing Process 4. F, W, S, SS.
Credits: 5; Prereq: NUU 3162C, NUU 3221C; Coreq: NUU 4500C.
Course designed to provide the student with experience in utilizing the nursing process in selected health care problems. Emphasis on restoration, rehabilitation and prevention.

NUU 4226C Nursing Process 5. F, W, S, SS.
Credits: 8; Prereq: NUU 4500C, NUU 4225C; Coreq: NUU 4501C.
Continuation of the series.

NUU 4227C Nursing Process 6. F, W, S, SS.
Credits: 8; Prereq: NUU 4501C, NUU 4226C; Coreq: NUU 4502C.
Continuation of the series.

NUU 4432 Professional Socialization 2. F, W, S, SS.
Credits: 3; Prereq: NUU 3431; Coreq: NUU 4943.
This course is designed to assist students in analyzing and synthesizing components of the professional role in nursing.

GRADUATE COURSES

NUU 6460 Conceptual Bases of Professional Nursing 1.
Credits: 4

NUU 6461 Conceptual Bases of Professional Nursing 2.
Credits: 4

NUU 6462 Nursing Perspectives 1: Analysis of Health Care System.
Credits: 4

NUU 6463 Nursing Perspectives 2: Administration of Nursing Services.
Credits: 4

NUU 6464 Nursing Perspectives 3: Systems of Nursing Education.
Credits: 4

NUU 6465 Nursing Perspectives 4: Cultural Influences on Health Care.
Credits: 4

NUU 6466 Nursing Perspectives 5: Impact of Health Policy System on Nursing.
Credits: 4

NUU 6467 Nursing Perspectives 6: Economics of Health Care and Delivery of Nursing Services.
Credits: 4

NUU 6468 Nursing Perspectives 7: Profiles of Professional Nursing.
Credits: 4

NUU 6650 Research Theory & Its' Application to Nursing.
Credits: 4

OCCUPATIONAL THERAPY
College of Health Related Professions

INSTRUCTIONAL STAFF 1977-78

Llorens, L.A., Chairman; Adams, S.P.; Gill, A.A.; Maduro, L.A.; McCormack, G.L.; Menks, F.A.; Samuelson, L.; Shoemyen, C.W.; Sieg, K.W.; Slaymaker, C.J.

See also course offerings under Health Related Professions (HRP).

OTH 2000 Introduction to Occupational Therapy. F, W.
Credits: 2; Prereq: HSC 1001.
History, current practice and trends in occupational therapy. Types of employment in various health care systems.

OTH 3010C Introduction to Clinical Procedures. F.
Credits: 2; Prereq: Admission to Occupational Therapy Curriculum.
Basic skills required for occupational therapy practice.

OTH 3110C Therapeutic Skills. F, W, S, SS.
Credits: 3 to 12; Prereq. or Coreq: OTH 2000 or consent of instructor.
Principles of hand and machine activities as applied to occupational therapy programs. Occupational Therapy majors require minimum of 9 credits.

OTH 3200C Applied Human Development 1. F.
Credits: 4; Prereq. OTH 2000.
Application to occupational therapy of principles of human growth and development from infancy through adolescence.

OTH 3201C Applied Human Development 2. W.
Credits: 4; Prereq: OTH 2000 and OTH 3200C.
Application to occupational therapy of principles of human growth and development from young adulthood through senescence.

OTH 4320C Problems of Psychosocial Dysfunction 1. S.
Credits: 4; Prereq: OTH 3200C, HSC 4550C.
First part of the sequence. Occupational therapy evaluation and treatment of patients with psychosocial function.

OTH 4321C Problems of Psychosocial Dysfunction 2. F.
Credits. 4, Prereq: OTH 4320C.
Continuation of the sequence.

OTH 4412C Musculoskeletal Anatomy. F.
Credits: 5
Lectures and intensive-laboratory study of the human musculoskeletal system with emphasis on the upper extremities.

OTH 4421C Problems of Physical Dysfunction 1.S
Credits: 4; Prereq: HSC 4540C, 4522C.
First part of the sequence. Occupational therapy evaluation and treatment of patients with neurological, orthopedic, medical and surgical disorders.

OTH 4422C Problems of Physical Dysfunction 2. F.
Credits: 4; Prereq: OTH 4421C.
Continuation of the sequence.

OTH 4500C Pediatric Disorders. W.
Credits: 4; Prereq: OTH 3200C and OTH 3201C.
Occupational therapy evaluation and treatment of childhood disorders.

OTH 4810 Practicum 1. W.
Credits: 2††; Coreq: OTH 3201C, HSC 4550C.
First part of the sequence OTH 4810-4811-4812. Designed to parallel academic course work. Supervised experience in local clinical settings.

OTH 4811 Practicum 2. S.
Credits: 2††; Prereq: OTH 4810; Coreq: OTH 4320C, OTH 4421C.
Continuation of the sequence.

OTH 4812 Practicum 3. F.
Credits: 2††, Prereq OTH 4811; Coreq OTH 4321C, OTH 4422C.
Continuation of the sequence.

OTH 4845 Internship 1. S.
Credits. 12; Prereq. Permission of Department Chairman.
First part of the sequence 4845-4846. Supervised clinical experience in facilities approved by the department.

OTH 4846 Internship 2. SS.
Credits. 12; Prereq. OTH 4845.
Continuation of sequence.

OTH 4935 Occupational Therapy Seminar. W.
Credits. 4, Prereq: Senior classification.
Selected readings and discussions of current developments in the field of occupational therapy. Individual investigations and reports on assigned topics.

GRADUATE COURSES

OTH 6418C Clinical Problems 1.
Credits: 4

OTH 6419C Clinical Problems 2.
Credits: 4

OTH 6539C Seminar: Occupational Therapy Management.
Credits: 4

OTH 6549C Seminar: Occupational Therapy Management.
Credits: 4

OTH 6770 Research Methods in Occupational Therapy.
Credits. 3

OTH 6780 Proseminar.
Credits. 3

OTH 6827C Advanced Specialty Practicum.
Credits: 3 to 5

OTH 6861L Specialty Residency.
Credits: 3 to 15

OTH 6905 Individual Work.
Credits: 1 to 15

ORNAMENTAL HORTICULTURE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Carpenter, W.J., Chairman; Barrett, J.E.; Barrick, W.E.; Conover, C.A.; Dudeck, A.E.; Johnson, C.R.; Joiner, J.N.; McConnell, D.B.; Nell, T.A.; Sheehan, M.R.; Sheehan, T.J.

ORH 3231 Grounds Maintenance. S.
Credits: 4; Prereq: ORH 3513.
Basic principles of landscape horticulture are reviewed in lecture sessions and design plans and real situations are analyzed in the laboratory. Both preventive and normal maintenance measures are considered. This course provides a comprehensive survey of landscape maintenance problems with emphasis on institutional and public areas for students interested in landscape design.

ORH 3513C Ornamental Plant Identification I. F, SS.
Credits: 4; Prereq: BSC 2010C or permission of instructor.
Identification, growth characteristics, culture and use of common landscape plants. Materials

††Grading is on a S-U basis only.

include basic trees, palms, shrubs, vines and ground covers utilized in general landscape beautification.

ORH 3514C Ornamental Plant Identification II. W.
Credits: 4, Prereq: ORH 3513.
Identification, growth characteristics, culture and use of less common landscape plants. Materials include trees, palms, shrubs, vines and ground covers utilized in landscape beautification.

ORH 3516 Herbaceous and Exotic Plant Materials. S.
Credits: 4, Prereq: ORH 3513 or permission of the instructor.
Herbaceous, semi-herbaceous, exotic and woody plant materials suitable for specialized landscape and interior decorative purposes. Materials include annuals, perennials, foliage plants and succulents.

ORH 3534 Relationships of Ornamental Plants to the Urban Environment. W.
Credits: 3
To provide the student with a basic appreciation and elementary understanding of the complex man-made environmental situations influencing ornamental plants.

ORH 3611 Retail Florist Shop Management. S.
Credits: 4, No Prerequisites.
A basic course in the operations of a retail florist shop, including management, shop design and layout, psychology of selling, post harvest handling of flowers and the principles of artistic design.

ORH 3731 Biological Illustrations. F.
Credits: 4; No prerequisites.
A basic course in the preparation of scientific illustration, including uses of illustration, materials, equipment, layout, design, and preparing sketches to scale. Techniques covered include pen and ink, water color, scratch board, and carbon dust.

ORH 3803 Introduction to the Interior Use of Plants. W. (SS odd years)
Credits: 3
An introductory coverage of the function and use of plants and cut flowers in the home as well as factors influencing growth and development of house plants in containers and planters. (Not for major credit of students in Ornamental Horticulture and Landscape Architecture.)

ORH 3813 Introduction to Residential Landscape Horticulture. F. (SS even years)
Credits: 3
An introductory coverage of the factors involved in (a) growth and development of landscape plants, (b) selection and adaptation of basic landscape plants and (c) principles involved in home landscape planning and maintenance. (Not for major credit of students in Ornamental Horticulture or Landscape Architecture.)

ORH 3815C Introduction to Landscape Horticulture. F.
Credits: 4; Prereq: ORH 3513C; ORH 3516C; ORH 3514C; strongly advised.
A basic course in the study of residential landscapes including preparation, evaluation and implementation of simple landscape plans. Emphasis will be placed on the use of ornamental plants for functional and aesthetic improvement of the home environments.

ORH 4221 Turfgrass Culture. S.
Credits: 4; Prereq: BOT 3503 and BOT 3503L; SOS 3022C; and ORH 4411 or with permission of instructor.
Size and scope of turfgrass industry and basic aspects of adaptation, establishment, and maintenance of turfgrasses.

ORH 4221L Turfgrass Culture Laboratory. S.
Credits: 2; Prereq. or Coreq: ORH 4221.
A laboratory oriented treatise of turfgrasses involving their identification, establishment, maintenance, and renovation requiring indepth student participation.

ORH 4232 Arboriculture. F.
Credits: 2; Prereq ORH 4411, SOS 3022 and ORH 3513 or with permission of instructor.
Principles and practices of planting, establishing and maintaining woody ornamental trees and shrubs.

ORH 4242L Arboriculture Laboratory. F.
Credits. 2; Prereq. or Coreq ORH 4232.
Practices of maintaining ornamental trees and shrubs.

ORH 425S Principles of Nursery Operations. S.
Credits: 3; Prereq: PLS 3221, PLS 3221L and ORH 4411.
Principles of establishing and developing woody ornamental nursery. Culture and marketing of container grown woody ornamentals are considered.

ORH 4255L Nursery Operations Laboratory. S.
Credits: 1; Prereq. or Coreq: ORH 4251.
Practical problems in developing nursery operations and culture of container woody ornamentals.

ORH 4263 Production of Floricultural Crops. W.
Credits: 4; Prereq: ORH 4411.
Basic concepts of commercial greenhouse construction, maintenance and environmental control techniques are discussed. Emphasis will be placed on the production, handling and marketing of major floriculture crops.

ORH 4263L Floricultural Crops Production Laboratory I. W.
Credit: 1; Prereq: ORH 4411, Coreq: ORH 4263.
A two-part laboratory enabling floriculture production majors to become familiar with flower crop production and handling.

ORH 4264L Floricultural Crop Production Laboratory II. S.
Credits: 1. Prereq: ORH 4263L
The second half of ORH 4263L. (These courses must be taken in numerical sequence.)

ORH 4280 Orchidology. W.
Credits: 4; Prereq: ORH 4411.
The principles and practices involved in the production of orchid plants and flowers, including nomenclature, breeding, seed culture, harvesting, and handling.

ORH 4411 Physiological Aspects of Ornamental Plant Production. F, S.
Credits: 4; Prereq: BOT 3503, BOT 3503L, PLS 2031.
Physiological and environmental factors affecting growth and yield of ornamental crops. Greenhouse and field production are both considered.

ORH 4905 Special Topics and Independent Study on Ornamental Horticulture. F, W, S, SS.
Credits: 1 to 8
Four sections of topics for independent study are offered: A — Research investigation including review of literature, drafting of a proposal, conduct of an experiment, collection of data, summation and interpretation of results and preparation of a report. B — Library or Studio Assignment, including analysis of several sources of information on a specific topic with a written evaluation and list of conclusions prepared. C — Advanced undergraduate research consisting of a continuation of experience in research with a specific plant commodity and conducted as in section A.

ORH 4931 Ornamental Horticulture Seminar. F, W, S.
Credits: 1
Selected reading, reports and discussion of current literature on ornamental horticultural topics. Emphasis is placed on various means of communication as an aid in understanding and evaluating technical information.

ORH 4941 Full Time Practical Work Experience in Ornamental Horticulture. F, W, S, SS.
Credits: 1 to 4; S-U Grade only. Prereq: Prior arrangement with adviser, approval of Dept. Chairman and Dean.

PEST MANAGEMENT AND PLANT PROTECTION
College of Agriculture, Special Program

The crop-science departments and the supporting disciplines of Entomology-Nematology, Weed Science (Plant Sciences), Plant Pathology and the School of Forest Resources and Conservation offer the following general and cross-departmental courses in Pest Management and Plant Protection.

PMA 3010 Fundamentals of Plant-Pest Management. F.
Credits: 3
Principles of the science that treats the subject of controlling plant pests through integrated systems of management.

PMA 3931 Seminar in Basic Plant-Pest Management. W.S.
Credits: 2; Prereq: PMA 3010.
Group study and discussion of the fundamental concepts that relate to Plant-Pest Management as a science.

PMA 3941 Internship in Plant-Pest Management. F, W, S, SS.
Credits: 3 to 4; Prereq: PMA 3010.
On-the-job training as paid, full-time apprentices to pest-management professionals for a minimum of 8 weeks. Enrollment is restricted to students specializing in the program of Pest Management and Plant Protection.

PMA 4401 Systems of Pest Management and Plant Protection. W.
Credits: 3; Prereq: PMA 3010, PMA 3931.
How problems in plant-pest management are solved through procedures involving systems-analysis, studies of pest management in terms of cost-benefit analysis, and the integration of pest-control practices into a unified management system applicable to different crop plants as exemplified through case-history studies.

PMA 4402L Laboratory Exercises in Pest Management. W.
Credits: 2
The laboratory work will emphasize tactics of plant-pest control, systems analysis, and the modeling and simulation of crop-pest interactions.

PHARMACEUTICAL CHEMISTRY
College of Pharmacy

INSTRUCTIONAL STAFF 1977-78

Hammer, R.H., Chairman; Andersen, B.D.; Finger, K.F.; Gramling, L.G.; Panzik, H.L.; Rao, K.V.; Schulman, S.G.

Pharmacy

PHA 4350 Natural Products. S, SS.
Credits: 4; Prereq: BCH 4203.
Isolation, structure and pharmaceutical applications of natural products used as prescription and non-prescription drugs, with emphasis on structure/activity associations.

PHA 4411 Analytical Pharmaceutical Chemistry. F.
Credits: 4; Prereq: CHM 3211, PHA 3112C.
Chemical and instrumental methods of analysis with emphasis on the determination of drugs in dosage forms and biological fluids.

PHA 4412L Analytical Pharmaceutical Chemistry. W, S.
Credits: 2; Prereq: PHA 4411.
The laboratory experiments to reinforce Analytical Pharmaceutical Chemistry PHA 4411.

PHA 4413 Thin Layer Chromatography. F.
Credits: 4; Prereq: PHA 4412L or permission of instructor.
Lecture and Laboratory course for the study of methods for qualitative and semiquantitative determination of drugs in pharmaceutical products by thin layer chromatography (TLC). Identification of drugs by thin layer chromatography.

PHA 4435 Pharmaceutical Chemistry 1. F.
Credits: 5; Prereq: CHM 3211, PHA 3112C.
Correlation of physical, chemical, and biological properties of therapeutically useful inorganic and organic compounds including radiopharmaceuticals and structure-activity relationships.

PHA 4436 Pharmaceutical Chemistry 2. W.
Credits: 5; Prereq: PHA 4435.
The second quarter of PHA 4435-4436-4437.

PHA 4437 Pharmaceutical Chemistry 3. S.
Credits: 5; Prereq: PHA 4435.
The third quarter of PHA 4435-4436-4437.

PHA 4438 Pharmaceutical Specialities. W.
Credits: 4; Prereq: PHA 4435.
The chemistry or composition, use, manufacturers, and drug interactions of the more important specialties, including hormones and vitamins, found in prescriptions.

PHA 4439 Pharmaceutical Specialties. S.
Credits: 4; Prereq: PHA 4435.
The second half of PHA 4438-4439.

PHA 4765 Veterinary Pharmaceutical Products. W.
Credits: 3; Prereq: PHA 4435.
The Chemistry or composition, uses, and manufacturers of the more important veterinary drugs.

PHA 4905L Problems in Pharmaceutical Chemistry. F, W, S, SS.
Credits: 1 to 3††; Prereq: PHA 4435, and average of 2.75 in all chemistry and pharmaceutical chemistry courses taken and permission of the instructor. May be repeated for a maximum of 9 credits.

GRADUATE COURSES

PHA 6354 Natural Medicinal Products I.
Credits: 3

PHA 6355 Natural Medicinal Products II.
Credits: 3

PHA 6356 Natural Medicinal Products III.
Credits: 3

PHA 6357L Natural Medicinal Products I.
Credits: 3

PHA 6358L Natural Medicinal Products II.
Credits: 3

PHA 6365C Advanced Histology and Microscopy of Vegetable Drugs.
Credits: 5

PHA 6367L Microanalytical Pharmacognosy.
Credits: 2

PHA 6375C Cultivation and Processing of Medicinal Plants.
Credits: 3

PHA 6416 Pharmaceutical Analysis I.
Credits: 5

PHA 6417 Pharmaceutical Analysis II.
Credits: 5

PHA 6418 Pharmaceutical Analysis III.
Credits: 5

PHA 6445 Chemobiodynamics.
Credits: 5

PHA 6470 Synthetic Medicinal Products I.
Credits: 3

PHA 6471 Synthetic Medicinal Products II.
Credits: 3

PHA 6472L Synthetic Medicinal Products I.
Credits: 3

PHA 6473L Synthetic Medicinal Products II.
Credits: 3

PHA 6474 Synthetic Medicinal Products III.
Credits: 3

PHA 6905C Research Procedures in Pharmaceutical Chemistry.
Credits: 2 to 6

PHA 6910C Supervised Research.
Credits: 1 to 5††

PHA 6934 Seminar in Pharmaceutical Chemistry.
Credits: 1

PHA 6940 Supervised Teaching.
Credits: 1 to 5††

PHA 6971L Master's Research.
Credits: 1 to 15††

PHA 7980L Doctoral Research.
Credits: 1 to 15††

PHARMACOLOGY
College of Medicine

INSTRUCTIONAL STAFF 1977-78

Maren, T.H., Chairman; Garg, L.C., Coordinator; Carlson, G.M.; Chapman, S.K.; Chiou, C.; Kadzielawa, C.; Kem, W.R.; Leibman, K.C.; Muther, T.F.; Silverman, D.N.; Travis, D.M.; Vogh, B.P.

Pharmacy

PHA 4516 Physiology-Pharmacology 1. S.
Credits: 5; Prereq: PHA 3500, PHA 3051 or permission of the Co-ordinator.
Principles of Pharmacology based on conjoint discussion of normal and abnormal physiologic and biochemical mechanisms. Special emphasis on drug distribution, metabolism, acid-base balance, digestive and excretory mechanisms.

PHA 4517 Physiology-Pharmacology 2. F.
Credits: 5; Prereq: PHA 4516.
Continuation of PHA 4516 with special emphasis on nervous, and cardiovascular function.

PHA 4518 Physiology-Pharmacology 3. W.
Credits: 5; Prereq: PHA 4517.
Continuation of PHA 4517 with special emphasis on respiratory and endocrine function, and chemotherapy.

PHA 4904 Pharmacology Research, F, W, S, SS.
Credits: 3; Prereq: B-average and permission of the Co-ordinator.
Laboratory or literature investigations of problems of current interest.

PHARMACY
College of Pharmacy

INSTRUCTIONAL STAFF 1977-78

Finger, K.F., Chairman; Angorn, R.A., Associate Chairman; Field, F.P., Associate Chairman; Perrin, J.H., Associate Chairman; Stewart, R.B., Associate Chairman; Araujo, O.E.; Becker, C.H.; Ciezkowski, J.; Curtis, R.L.; Doering, P.L.; Garrett, E.R.; Harrison, W.; Haupt, C.S.; House, M.L.; Johnson, S.; Lee, C.S.; Lemberger, M.A.; McCormick, W.C.; McKenzie, M.W.; Pevonka, M.P.; Robinson, J.D.; Simpkins, J.W.; Torosian, G.; Vilallonga, F.; Yost, R.L.

Pharmacy

PHA 3050 Introduction to Pharmacy. F.
Credits: 2; Prereq: Pharmacy classification or permission.
Introduces first-year students to the profession of Pharmacy. Using a model to examine the relationship between practice components, knowledge roots, professional attributes, and self-concept in the pharmacist, the course provides factual information about the status of the profession; invites the student to begin to analyze and evaluate issues regarding such topics as the roles of the pharmacist, the tripartite system of governance in pharmacy, and the direction of pharmacy education. The course should serve as an advance organizer to help students understand the rationale for courses and topics which they will encounter during the three years of the baccalaureate degree program.

PHA 3110C Pharmaceutics 1. F.
Credits: 5; Prereq: PHY 2050, CHM 3211.
The first course of the sequence PHA 3110C-3111C-3112C. The course sequence covers the measurement, description and prediction of physical and chemical parameters used in the systems and operations necessary for pharmaceutical product development and dosage forms. Stability and pharmacokinetics, properties of dosage forms, and pharmaceutical adjuncts are also discussed.

PHA 3111C Pharmaceutics 2. W.
Credits: 5; Prereq: PHA 3110C.
The second course of the sequence PHA 3110C-3111C-3112C.

PHA 3112C Pharmaceutics 3. S.
Credits: 5; Prereq: PHA 3111C.
Third course of the sequence PHA 3110C-3111C-3112C.

PHA 3500C Applied Human Anatomy. F.
Credits: 5; Prereq: ZOO 2011C and pharmacy classification.
Gross anatomy of the important organ systems of the human and mammalian.

PHA 3501C Applied Human Histology. W.
Credits: 5; Prereq: PHA 3500C.
Microscopic study of the important tissues and organs of the human and mammalian.

PHA 3630C Practicum Clerkship. W, S.
Credits: 5; Prereq: 3PH Classification.
Introduction to the professional and management components of pharmacy practice designed to identify and develop competencies essential to comprehensive pharmaceutical care. Nomenclature and basic therapeutics of the more frequently prescribed drugs are stressed. Emphasis is placed on community ambulatory care environment.

PHA 4103C Professional Practice. W.
Credits: 4; Prereq: PHA 3112C.
Methods of compounding and dispensing prescriptions, of detecting and overcoming incompatibilities, and checking and pricing prescriptions. The application of pharmaceutical adjuncts.

PHA 4106C Injection Dosage Forms and Other Sterile Products. W.
Credits: 5; Prereq: MCB 3013-13L and last year professional student.
Fundamentals of preparing, processing, and

††Grading is on a S-U basis only.

administration of injection dosage forms and other sterile products. Consideration of equipment, facilities, vehicles, containers, closures, etc. employed for such products.

PHA 4120 Pharmaceutics 4 - Biopharmaceutics. W.
Credits: 4, Prereq: PHA 3112C. Introductory Biopharmaceutics.
An introduction to the study of the time course of drugs in the body with reference to their absorption, distribution, metabolism and elimination. Consideration is given to rate processes, the physiochemical influences on ADME and formulation factors involved in drug delivery and availability.

PHA 4140C Manufacturing Pharmacy. F.
Credits: 4; Prereq. PHA 3112C.
Source of raw materials, production costs, manufacturing procedures, and preparation of various pharmaceutical dosage forms on a pilot-plant scale.

PHA 4150 Hospital Pharmacy. W.
Credits: 3; Prereq: PHA 3110C.
An introduction to the practice of pharmacy in hospitals.

PHA 4202 Pharmaceutical Administration 1. F.
Credits: 4; Prereq: 5PH Classification.
The first part of the course PHA 4202-4211. A study of the activities involved in the distribution of pharmaceutical goods and services and the effect of third party payment plans on pharmaceutical distribution.

PHA 4211 Pharmaceutical Administration 2. W.
Credits: 5; Prereq: PHA 4202.
The second part of the course PHA 4202-4211. A study of the principles and problems of planning, organizing and controlling a community pharmacy.

PHA 4232 Pharmaceutical Law. F.
Credits: 5; Prereq: 5PH Classification.
A study of the federal, state, and local laws and regulations relating to all aspects of the profession of pharmacy.

PHA 4506 Body Fluids and Electrolytes. S.
Credits: 4; Prereq: PHA 4517.
Pharmacological treatment of topics related to body fluids, electrolytes, acid-base balance, ion exchange resins, carbonic anhydrase inhibitors, plasma extenders, and parenteral alimentation.

PHA 4600 Therapeutic Principles and Drug Therapy. F, S.
Credits: 4, Prereq: 4NR - 2 quarters of clinical experience in hospital or 4PH classification.
An overview for nursing and pharmacy students for the study of pharmacological and therapeutic principles of drug therapy. Basic mechanisms of drug action, adverse effects, contraindications, dosages, interactions, and pharmacotherapeutic indications are stressed.

PHA 4602 Therapeutics. F, S.
Credits: 4; Prereq: 5PH classification.
This course provides a basic introduction to the therapy of common disease states. The physiologic, economic, and social impact of disease is presented. Students will receive information on pathophysiology of common disease states, current therapeutic measures to treat disease and principles of monitoring drug therapy in patients.

PHA 4631C Practicum Clerkship. F, W.
Credits: 4; Prereq: PHA 3630.
The student is presented with the basic operational and programmatic concepts associated with institutional pharmacy practice. Nomenclature and basic therapeutics of drugs primarily prescribed for inpatients and interpretative information regarding common laboratory tests are discussed.

††Grading is on a S-U basis only.

PHA 4632C Practicum Clerkship. F, S, SS.
Credits: 3; Prereq: 5PH Classification.
This course provides the pharmacy student supervised exposure and involvement in patient care through monitoring patient drug therapy; obtaining patient drug histories and interviews; professional interaction with patients, physicians, nurses, and allied health practitioners; and participation in physician rounds.

PHA 4660 Clinical Psychiatric Pharmacy. S.
Credits: 4, Prereq: BCH 4203, PHA 4516 or permission.
Introduction to the use of psychotherapeutic agents in treating emotional disorders.

PHA 4720 Pharmacy and Society. S.
Credits: 3; Prereq: Pharmacy classification or permission
Pharmacy from its beginning to today with emphasis on the effects of changing social patterns on the various areas of the profession.

PHA 4735C Drugs and Society. F, W, S, SS.
Credits: 3††
A course designed to familiarize the student with the pharmacological, psychological, and sociological aspects of drug misuse.

PHA 4740 The Pharmacist and Dynamics of Patient Care. F.
Credits: 3; Prereq: Pharmacy classification.
The perception of disease from the vantage point of the society, the patient, and the health professional. Patient and pharmacist roles are discussed in terms of health needs.

PHA 4750 Public Health and Communicable Diseases. W.
Credits: 4; Prereq: MCB 3013 and BCH 4203.
Prevalent community infectious diseases such as those caused by bacteria, viruses, rickettsia, protozoa, and fungi. Allergy and immunity, are discussed.

PHA 4760 Dermatological Drug Products and Their Uses. F.
Credits: 3; Prereq: PHA 3112C, MCB 3013-13L.
A study of dermatological drugs of choice in the treatment of the various abnormal skin conditions. The importance of the role of the pharmacist in this area is emphasized and discussed.

PHA 4769 Non-Prescription Products. W, S.
Credits: 3; Prereq: PHA 4437.
An evaluative study of non-prescription drugs with emphasis on formulation problems, chemical structure relationships, clinical and toxicity implications, and possible interactions.

PHA 4821 Clinical Radiopharmacy. W.
Credits: 4; Prereq: Pharmacy classification or permission.
Basic physical phenomena of radiation and how radiopharmaceuticals are used in diagnosing disease states. Correlation of the pathophysiology of disease and disease states of the organ systems.

PHS 4905C Problems in Pharmacy. F, W, S, SS.
Credits: 1 to 3††; Prereq: PHA 3112C.
Laboratory and/or literature investigations of problems in pharmacy of current interest. May be repeated for a maximum of 6 credits with approval of departmental chairman.

PHA 4930 Pharmacy Seminar. F, W, S.
Credits: 2††; Prereq: 5PH Classification.
Literature investigations and reports by students on problems in pharmacy of current interest.

GRADUATE COURSES

PHA 5508 Principles of Endocrinology. SS.
Credits: 5; Prereq: A course in Physiology.

PHA 5601 Individualizing Dosage Regimens.
Credits: 3

PHA 5605 Advanced Topics in Clinical Pharmacy.
Credits: 2; Maximum of 6 credits.

PHA 5762C Dermatological Protectives. S.
Credits: 5; Prereq: PHA 3112C.

PHA 6107C Parenterals.
Credits: 5

PHA 6115 Equilibria, Complexations and Interactions of Drugs.
Credits: 5

PHA 6116 Stability and Kinetics of Drugs.
Credits: 5

PHA 6125 Pharmacokinetics and Biopharmaceutics.
Credits: 5

PHA 6146C Pharmaceutical Equipment and Machinery.
Credits: 4

PHA 6147C Pharmaeutical Machinery and Product Formulation.
Credits: 4

PHA 6148C Pharmaceutical Product Formulation.
Credits: 4

PHA 6155 Hospital Pharmacy Seminar.
Credits: 1; Maximum of 3 credits.

PHA 6225 Hospital Pharmacy Administration.
Credits: 3

PHA 6235 Advanced Pharmaceutical Law.
Credits: 5

PHA 6236 Health Sciences Liability Law.
Credits: 3

PHA 6237 Pharmaceutical Law Seminar.
Credits: 1

PHA 6606 Clinical Pharmacy.
Credits: 4

PHA 6607 Therapeutics in Clinical Pharmacy 1.
Credits: 3

PHA 6608 Therapeutics in Clinical Pharmacy 2.
Credits: 4

PHA 6790 Drug Information.
Credits: 4

PHA 6905L Research Methods in Pharmaceutical Sciences.
Credits: 2 to 6

PHA 6910 Supervised Research.
Credits: 1 to 5††

PHA 6935 Selected Topics in Pharmacy.
Credits: 3

PHA 6936 Advanced Topics in Pharmaceutical Sciences.
Credits: 1 to 2

PHA 6937 Topics in Pharmaceutical Administration.
Credits: 3

PHA 6940 Supervised Teaching.
Credits: 1 to 5††

PHA 6971 Master's Research.
Credits: 1 to 15††

PHA 7980 Supervised Teaching.
Credits: 1 to 15††

DOCTOR OF PHARMACY PROGRAM (Pharm.D.)

PHA 5605 Advanced Topics in Clinical Pharmacy. F, W, S, SS.
Credits: 2; Maximum of 6 credits; Prereq: 1PD Classification.
Recent literature and new drug entities relevant to the practice of clinical pharmacy.

PHA 5680 Advanced Clinical Pharmacy Clerkship - Internal Medicine. F, W, S, SS.
Credits: 6; Prereq: Successful completion of the didactic phase of the Advanced Clinical Pharmacy Program and recommendation of the student's supervisory committee.
The student will be assigned to Internal Medicine service for 8 weeks. Activities include participation in drug therapy monitoring, drug therapy selection, patient interviewing, and discharge planning.

PHA 5681 Advanced Clinical Pharmacy Clerkship - Pediatrics. F, W, S, SS.
Credits: 6; Prereq: Successful completion of the didactic phase of the Advanced Clinical Pharmacy Program and recommendation of the student's supervisory committee.
The student will be assigned to Pediatric Services for 8 weeks. Activities include participation in drug therapy monitoring, drug therapy selection, patient interviewing, and discharge planning.

PHA 5682 Advanced Clinical Pharmacy Clerkship - Psychiatry. F, W, S, SS.
Credits: 4; Prereq: Successful completion of the didactic phase of the Advanced Clinical Pharmacy Program and recommendation of the student's supervisory committee.
The student will be assigned to an inpatient Psychiatry Service for 4 weeks. Activities include participation in drug therapy monitoring, drug therapy selection, patient interviewing, and discharge planning.

PHA 5683 Advanced Clinical Pharmacy Clerkship Chronic Care Ambulatory Medicine. F, W, S, SS.
Credits: 6; Prereq: Successful completion of the didactic phase of the Advanced Clinical Pharmacy Program and recommendation of the student's supervisory committee.
Activities include participation in drug therapy monitoring, drug therapy selection, patient interviewing, and discharge planning in the unique settings provided.

PHA 5684 Advanced Clinical Pharmacy Clerkship. Electives. F, W, S, SS.
Credits: 1 to 10; Prereq: Successful completion of the didactic phase of the Advanced Clinical Pharmacy Program and recommendation of the student's supervisory committee.
The student will actively participate in drug therapy monitoring, drug therapy selection, patient interviewing, and discharge planning on a clinical specialty service designated as an elective rotation. A minimum of 14 credits of elective clinical clerkship credits are required for the Advanced Clinical Pharmacy Program.

PHA 5685 Advanced Clinical Pharmacy Clerkship—Drug Information. F, W, S, SS.
Credits: 4; Prereq. Approval of student's supervisory committee.
The student will be assigned to the Drug Information and Pharmacy Resource Center (DIPRC) in the College of Pharmacy for a 4-week period. Participating functions will comprise response to inquiries received by DIPRC, writing Pharmacy and Therapeutic Committee reports, supervision of undergraduate students in DIPRC, and assist in preparation of the DIPRC newsletter.

PHILOSOPHY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Haring, E.S., Chairman; Allen, J.M.; Auxter, T.P.; D'Amico, R.; Elliott, H.H.; Fuller, G.; Haynes, R.P.; Lewis, A.L.; McKnight, S.A.; Simon, T.W.; Zeman, J.J.; Zweig, M.B.; Emeriti: Mehlberg, H.; Morris, C.W.

The major: An undergraduate majoring in philosophy takes a minimum of 36 hours from the courses listed below. Normally at least 12 hours will be at the 4000 level. No specific courses are required. The Department strongly recommends early and frequent consultation with its faculty advisers to assure each student a coherent program meeting his or her interests and career plans. For instance, somewhat different courses are recommended respectively to pre-law students, to those with interests in history and literature and to those who may continue in philosophy.

Courses: There are no prerequisites for 2000 and 3000 level courses. Work in the latter is more demanding but not beyond able underclassmen. Enrollment in a 4000 level course requires the permission of the instructor.

Since the descriptions below are general, and not all courses are offered every year, more precise information about offerings is posted on the bulletin board outside Room 240A, ASB, the Department office. Different sections under a given course number usually do not have an identical content, so the board must be read before registration.

Honors: There are three requirements for honors. A student must (a) have and maintain a 3.5 average in philosophy, (b) elect 12 hours of 4000 level course work and (c) in addition take 4 hours of PHI 4912, the Honors Seminar. Application must be made to the Department at least one quarter before graduation and preferably two quarters.

Philosophers and Schools

PHP 3765 Marx W.
Credits: 4
An introduction to Marx's social and political philosophy through selected readings in Marx and later theorists, e.g., Lenin, Luckacs, Gramsci.

PHP 3780 Meaning, Value and Action. F, SS.
Credits: 4
A study of problems arising in the development of societies and individuals, involving relationships between knowledge and human values. Readings usually in Peirce, James, Dewey and contemporary authors. This course is an elective in American Studies.

PHP 3786 Topics in Existentialism. S, SS.
Credits: 4; No prereq.
A study of selected topics in the religious and philosophical writings of the existentialist thinkers.

PHP 4000 Plato. W.
Credits: 4
An intensive study of at least one major dialogue together with related writings.

PHP 4010 Aristotle. S.
Credits: 4
An advanced introduction to central theories and themes.

PHP 4410 Kant. W.
Credits: 4
A study of one or more of Kant's major philosophical works.

PHP 4782 Phenomenology 2. W.
Credits: 4
A study of the major writings of one or more of the phenomenologists.

PHP 4784 Analytic Philosophy. W.
Credits: 4
The study of one or more major works or themes in recent British-American philosophy.

All PHP courses listed below may be repeated with change of content up to a maximum of 12 credits in the case of 4 credit courses and up to a maximum of 15 credits in the case of 5 credit courses.

GRADUATE COURSES

PHP 5005 Studies in Plato. W.
Credits: 4

PHP 5015 Studies in Aristotle. S.
Credits: 4

PHP 5415 Studies in Kant. W.
Credits: 4

PHP 5781 Studies in Pragmatism. W.
Credits: 5

PHP 5785 Studies in Analytic Philosophy. W.
Credits: 4

PHP 6419 Seminar in Kant.
Credits: 5

PHP 6783 Seminar in Phenomenology.
Credits: 5

PHP 6785 Seminar in Analytic Philosophy.
Credits: 5

Philosophy

PHI 2010 Introduction to Philosophy. F, W, S, SS.
Credits: 4
A sampling of philosophical problems and methods through the study of traditional and/or contemporary works selected by each instructor.

PHI 2100 Logic. F, W, S, SS.
Credits: 4
An introduction to ways of analyzing arguments and a study of some of the elementary tools of logic. Some portions of the course may be adapted on request, to specific fields, e.g., pre-law, business.

PHI 2403 Science, Myth and Values. F.
Credits: 4
An approach to the sciences contrasting them with proto-scientific and non-standard scientific modes of thought, examining the roles of science and myth in society, and assessing the relation between science and technology.

PHI 2630 Contemporary Moral Issues. F, W, S.
Credits: 4
An application of philosophical analysis to current moral issues.

PHI 2930 Special Topics. F, W, S.
Credits: 2 to 4
An occasional course offered according to the current interest of the faculty. May be repeated with change of content up to a maximum of 8 credits.

PHI 3130 Symbolic Logic. F, W, S, SS.
Credits: 5
A systematic study of forms of deduction by the technique of truth-functional analysis and quantification.

PHI 3300 Theory of Knowledge. F.
Credits: 4
Exploration of basic issues: e.g., the nature and cognitive role of perception; the definition of truth; what, if anything, can be certainly known.

PHI 3320 Philosophy of Mind. W.
Credits: 4
An examination of theories of mind and of problems such as the nature of the self, the relation of the mental to the physical, and minds vs. machines. Readings may be taken from sources in psychology and neurophysiology as well as

philosophy. May be repeated with change of content up to a maximum of 8 credits.

PHI 3400 Philosophy of Science. W.
Credits: 4
A basic introduction to central contemporary issues, e.g., the nature of laws, the logic of discovery and the relationships between various sciences. Emphasis on the physical sciences. This course is a sequel to PHI 2403 but does not presuppose it.

PHI 3420 Philosophy of Social Science. S.
Credits: 4
A study of such problematic topics as the scientific status of social science, the relationships between individuals and groups and the nature of cultural relativity

PHI 3451 Philosophy and Biology. S.
Credits: 4
Intensive study of problems presented by developments in the biological sciences and medicine. Topics include reductionism vs. holism, and theory-construction, as well as more general issues such as humans' relation to their environment. No prerequisite, but PHI 3400 is recommended.

PHI 3650 Moral Philosophy. F.
Credits: 5
Analysis and criticism of various ideals of human excellence, and standards for making moral decisions.

PHI 3700 Philosophy of Religion. W.
Credits: 4
A philosophical examination of religious thought and experience.

PHI 3800 Aesthetics. S.
Credits: 5
An approach to the fine arts via questions about the nature of art, creativity, aesthetic experience and critical judgments.

PHI 3930 Special Topics. F, W, S.
Credits: 2 to 4
An occasional course offered according to the current interests of the faculty. Repeatable with change in content up to 8 credits.

PHI 4131 Advanced Symbolic Logic. W.
Credits: 5; Prereq: PHI 3130.
Deductive techniques. A consideration of formal systems and related topics. May be repeated with a change in content up to a maximum of 15 credits.

PHI 4227 Philosophy and Linguistics. S.
Credits: 4
Topics include methodological approaches to language and philosophical issues in linguistics.

PHI 4341 Phenomenology 1. F.
Credits: 4
The theory and practice of phenomenology as a philosophical method.

PHI 4360 Theory of Knowledge. F.
Credits: 4
Examination of positions and issues, usually with a contemporary emphasis.

PHI 4404 Issues in Philosophy of Science. S.
Credits: 5
Examination of contrasting positions respecting physical and/or biological and/or social science.

PHI 4540 Metaphysics. F.
Credits: 4
Examination of positions and issues, usually with a contemporary emphasis.

PHI 4633 Ethical Issues in Medicine. W.
Credits: 4
An exploration in depth of problems in medical practice and research which have an ethical component.

PHI 4680 Theory of Value. W.
Credits: 4
Examination of positions and issues, usually with a contemporary emphasis.

PHI 4764 Philosophy of Religion. S.
Credits: 4
Examination of positions and issues, usually with a contemporary emphasis.

PHI 4801 Philosophy of Art. S.
Credits: 4
The exploration of one or more issues concerning the function of art, the role of artists and the relation of different arts to one another.

PHI 4905 Individual Work. F, W, S, SS.
Credits: 1 to 4; Prereq: 12 hours of work in philosophy and permission of the Department.

PHI 4912 Honors Seminar. F, W, S, SS.
Credits: 2 to 4
Open to qualified philosophy majors, upon application to the Department.

PHI 4930 Advanced Undergraduate Special Topics. F, W, S, SS.
Credits: 1 to 4
An occasional course offered according to the current interests of the faculty. May be repeated with change in content up to a maximum of 12 credits.

All PHI courses listed below may be repeated with change of content up to a maximum of 12 credits in the case of 4 credit courses and up to a maximum of 15 credits in the case of 5 credit courses

GRADUATE COURSES

PHI 5136 Graduate Symbolic Logic. W.
Credits: 5; Prereq: PHI 3130

PHI 5225 Studies in Philosophy and Linguistics. S.
Credits: 4

PHI 536S Studies in Theory of Knowledge. F.
Credits: 4

PHI 5405 Studies in Issues in Philosophy of Science. S.
Credits: 5

PHI 550S Studies in Metaphysics. F.
Credits: 4

PHI 568S Studies in Theory of Value. W.
Credits: 4

PHI 5705 Studies in the Philosophy of Religion. S.
Credits: 4

PHI 5807 Studies in the Philosophy of Art. S.
Credits: 4

PHI 5905 Individual Work. F, W, S, SS.
Credits: 1 to 5

PHI 5934 Graduate Special Topics. F, W, S, SS.
Credits: 1 to 4

PHI 6105 Seminar in Logic.
Credits: 5

PHI 6325 Seminar in the Philosophy of Mind.
Credits: 5

PHI 6426 Seminar in Epistemology and Social Theory.
Credits: 5

PHI 6456 Psychology and Philosophy of Science.
Credits: 5

PHI 6686 Seminar in Problems of Value.
Credits: 5

PHI 6806 Seminar in the Philosophy of Art.
Credits: 5

PHI 6905 Individual Work.
Credits: 1 to 5

PHI 6910 Supervised Research.
Credits: 1 to 5††

PHI 6934 Special Topics.
Credits: 1 to 5

PHI 6940 Supervised Teaching.
Credits: 1 to 5††

PHI 6971 Master's Research.
Credits: 1 to 15††

PHI 7980 Doctoral Research.
Credits: 1 to 15††

Philosophy, History of

PHH 3100 Ancient Greek Philosophy. F, S, SS.
Credits: 5
The history of philosophy from the pre-Socratics to Plotinus, emphasizing selected primary sources.

PHH 3200 Medieval Philosophy. W.
Credits: 5; No prereq.
The history of philosophy in the Scholastic centuries and into Renaissance; selected primary works.

PHH 3400 Modern Philosophy 1. W, S.
Credits: 5; No prereq.
The history of philosophy from Descartes to Kant, the period strongly influenced by modern science; selected primary works.

PHH 3440 Modern Philosophy 2. F, W.
Credits: 5; No prereq.
German idealism and some 19th century developments (e.g., Hegel, Marx, Nietzsche, Schopenhauer); selected primary works.

PHH 3620 Conceptual Analysis 1. W.
Credits: 4
An investigation of the nature and principles of a major contemporary philosophical movement known as conceptual, or linguistic, analysis. The principles studied may be applied to some real-life problems of current interest.

PHH 3621 Conceptual Analysis 2. S.
Credits: 4; No prereq.
An examination of selected works by one or more philosophers of the contemporary conceptual, or linguistic, analysis movement.

PHH 3640 Early Existentialist Thought. F.
Credits: 4
An introductory study of the basic religious, literary or philosophical writings of the early existentialist thinkers.

PHH 3641 Later Existentialist Thought. W.
Credits: 4; No prereq.
An introductory study of the basic religious, literary or philosophical writings of the later existentialist thinkers.

PHH 4130 Early Greek Philosophy. F.
Credits: 4
An examination of the first, i.e., pre-Socratic, stages of Western philosophy—with some reference both to cultural context and to later influence.

PHH 4205 Medieval Philosophy. S.
Credits: 4
The study of representative works from the period c. 400-1400.

††Grading on S-U basis only.

PHH 4401 Themes in Modern Philosophy. F.
Credits: 4
An examination of dominant themes and representative figures from the modern period.

PHH 4500 Nineteenth Century Philosophy. S.
Credits: 4
An examination of one or more figures or schools of thought from the post-Kantian period.

PHH 4703 The Pragmatic Movement. W.
Credits: 5
A consideration of the extent to which the work of Peirce, James, Dewey, Mead and Lewis forms an organized philosophical position; an elective in American Studies.

All PHH courses listed below may be repeated with change of content up to a maximum of 12 credits in the case of 4 credit courses and up to a maximum of 15 credits in the case of 5 credit courses.

GRADUATE COURSES

PHH 5135 Studies in Early Greek Philosophy. F.
Credits: 4

PHH 5206 Studies in Medieval Philosophy. S.
Credits: 4

PHH 5406 Studies in Modern Philosophy. F.
Credits: 4

PHH 5505 Studies in Nineteenth Century Philosophy. S.
Credits: 4

PHH 5645 Studies in Phenomenology 1. F.
Credits: 4

PHH 5646 Studies in Phenomenology 2. W.
Credits: 4

PHH 6069 Seminar on Themes in Classical/Medieval Philosophy.
Credits: 5

PHH 6106 Seminar in Ancient Philosophy.
Credits: 5

PHH 6405 Seminar in Modern Philosophy.
Credits: 5

PHH 6509 Seminar in 19th Century Philosophy.
Credits: 5

PHH 6649 Seminar in 20th Century European Philosophy.
Credits: 5

Philosophy of Man and Society.

PHM 3201 Critical Social Theory. S.
Credits: 4
Problems and issues in the development of contemporary social and political philosophy.

PHM 3202 Political Philosophy. F.
Credits: 4
A study of political theories and their relation to political transformation.

PHM 3224 Feminism and Philosophy. W.
Credits: 4
Analysis of various philosophies of feminism, e.g., Existentialist, Marxist, Socialist, in order to develop a philosophy of feminism.

PHM 3400 Philosophy of Law. W.
Credits: 4
Introduction to philosophical issues in legal theory, covering such topics as the justification and source of legal authority, nature of the judicial process, rights, justice, civil liberties, and the relation of law and morality.

PHM 3420 The Individual and The Law. W, S.
Credits: 4
Study of selected topics and problems as they present themselves to citizens, lawyers, philosophers and scientists; emphasis on philosophical presuppositions implicit in juridical thinking.

PHM 3500 Philosophy of History. F.
Credits: 4
An inquiry into basic issues concerning history as made and history as investigated. Major theories of historical development and/or contemporary analytic controversies will be considered.

PHM 4055 Philosophy and Mental Health. F.
Credits: 4
Discovering comparing and criticizing diverse philosophical presuppositions implicit in various types of psychological care and prevention.

PHM 4440 Problems in the Philosophy of Law. S.
Credits: 4
An examination of various traditionally philosophical issues appearing in legal theory, practice and literature, emphasis on such topics as the concepts of responsibility, causation, punishment and intentionality.

PHM 4501 Advanced Philosophy of History. W.
Credits: 4
An investigation of controversial topics related to history; e.g., explanation, general laws, objectivity and relativism. One or more classical theories of history will be examined.

PHM 4700 Philosophy of Culture. S.
Credits: 4
Contemporary philosophic perspectives on the nature and formation of culture.

All PHM courses listed below may be repeated with change of content up to a maximum of 12 credits in the case of 4 credit courses and up to a maximum of 15 credits in the case of 5 credit courses.

GRADUATE COURSES

PHM 5505 Advanced Philosophy of History. W.
Credits: 4

PHM 5520 Studies in Philosophy of Culture. S.
Credits: 4

Religion

REL 3620 Philosophies of Judaism.
Credits: 4
An investigation of selected figures and themes in the Jewish philosophical tradition both classical and modern. Various approaches both mystical and rational will be considered. May be repeated with change of content up to a maximum of 12 credits.

HEALTH EDUCATION AND SAFETY
College of Physical Education, Health and Recreation

INSTRUCTIONAL STAFF 1977-78

Fagerberg, S.W., Chairman; Crone, E.G.; Hicks, D.A.; Nuetzel, W.A.; Rienzo, B.A.; Sandefur, W.T.; Wallace, H.A.

HES 1006 Contemporary Health Issues and Problems. F, S.
Credits: 3 to 6; determined by the number of discussion groups selected in addition to the core module.
Small discussion groups are topically oriented, which include death, drugs, ecology, human sexuality and others. The weekly core class is designed to relate values to the issues found in these topics.

HES 2000 Personal and Family Health. F, W, S, SS.
Credits: 4
Current health problems are examined such as drugs, sexuality, nutrition, human ecology, mental health, disease and consumer health.

HES 2001 Community and Environmental Health. F, W, S.
Credits: 4
A survey of community health organizations and contemporary health issues such as population growth, environment, poverty, medical care and disease.

HES 2400 First Aid and Personal Safety. F, W, S, SS.
Credits: 3
Approved practices and training in first aid and medical self-help essential for survival in emergencies and during disasters.

HES 3144 Health Education and Medical Terminology. F, W, S, SS.
Credits: 3
Provides a working knowledge of the elements of professional terms related to the human body in health and disease. Descriptive definitions and applications of practical significance are included, with emphasis on the meaning of word roots and combined forms.

HES 3301 Elementary School Health Program. F, W, S, SS.
Credits: 4
Health services, environment and instruction for the school child. Teaching areas include sex education, mental health, foods, diseases, drugs and accidents.

HES 3404 Instructor's First Aid and Emergency Care. S.
Credits: 4; Prereq: HES 2400.
Designed to prepare competent and certified instructors in Standard First Aid and Personal Safety, in Cardio-Pulmonary Resuscitation, in Multi-Media, and in Basic First Aid according to American National Red Cross Standards.

HES 3431 School and Community Safety Education. F, W, S, SS.
Credits: 3
Accident problems in the home, school and community, and organized programs of safety education in elementary and secondary schools.

HES 3945 Field Experience in Public Health. W.
Credits: 4; Prereq: HES 2001.
Orientation in the conduct of community health programs. Field experiences are arranged with a wide variety of community health agencies.

HES 4302 Health Education in the Secondary School. F, W.
Credits: 4
Comprehensive health education emphasizing adolescent health needs and teaching in areas such as drugs, sexuality, nutrition, disease, and consumer health.

HES 4450 Driver and Traffic Safety Education. F, W, S, SS.
Credits: 4; Prereq: or Coreq: HES 4450.
state driver's license.
Analysis of traffic problems. Essential factors in efficient motor vehicle operation including laboratory experiences in simulators, dual control car and on the multiple car driving range.

HES 4451 Teaching Driver and Traffic Safety Education. F, W, S, SS.
Credits: 4; Prereq: or Coreq: HES 4450.
Organization, administration and teaching techniques of driver education for public high schools including student teaching.

HES 4510 Consumer Health. W, S.
Credits: 3
Examines resources available to the public for health care and protection, including legitimate

components of the health care system, and fraudulent practices.

HES 4540 Drug Education. F, W, S.
Credits: 3
Drug education knowledge, skills and procedures emphasize team approaches in methodology for elementary and secondary school, college and community health settings.

HES 4561 Sex Education. F, S.
Credits: 3
Emphasis on content, issues, methodology and materials for the study of human sexuality in the elementary and secondary schools and community settings.

HES 490S Variable Topics in Health Education. F, W, S, SS.
Credits: 1 to 5
Offered upon request of students to meet special interests which are not adequately provided for in other courses.

HES 4946 Community Health Education — Internship. W, S.
Credits. 6 to 16

GRADUATE COURSES

HES 593S Current Topics in Health Education. F, W, S, SS.
Credits: 1 to 5

HES 612S Scientific Foundations of Health. W.
Credits: 4

HES 616S Issues and Trends in Health Education. S.
Credits: 4

HES 6266 Epidemiology and Community Health. F.
Credits: 4

HES 6328 Health Education in Community and School. W, SS.
Credits: 4

HES 6904 Readings in Health Education. F, S, SS.
Credits: 3; Maximum of 6 credits.

HES 690S Directed Independent Study.
Credits: 1 to 5; Maximum of 10 credits.

HES 6910 Supervised Research.
Credits: 1 to 5††

HES 6940 Supervised Teaching.
Credits: 1 to 5††

HES 694S Workshop Series in Health Education.
Credits: 1 to 10

HES 6971 Master's Research.
Credits: 1 to 15††

Health, Leisure and Physical Education

GRADUATE COURSES

HLP 593G Current Topics in Physical Education. F, W, S, SS.
Credits: 1 to 5, Prereq. Permission of the Chairman of the Department.

HLP 6322 Evaluation Procedures in Health Education.
Credits: 3

HLP 634S Research Methods in Health Education, Physical Education, and Recreation. F.
Credits: 4

PROFESSIONAL PHYSICAL EDUCATION
College of Physical Education, Health, and Recreation

††Grading is on a S-U basis only.

INSTRUCTIONAL STAFF 1977-78

Holyoak, O.J., Acting Chairman; Allen, R.E.; Boyd, C.A.; Graham, M.E.; Kaufmann, D.A.; Korey, L.A.; Leavitt, N.M.; Lerch, H.A.; Siders, R.A.; Tennant, L.K.; Welch, P.D.; Whiddon, N.S.; Zauner, C.W.

The following members of the Division of Intercollegiate Athletics instruct in the Professional Physical Education program: Dickey, D.; Fuller, D.

Dance

DAN 3500 Dance Production. F, W, S.
Credits: 1 to 3; Prereq: Consent of instructor.
Individual and group composition in modern dance for production including staging and costuming. May be repeated with change of content up to a maximum of 9 credits.

DAN 4103 Seminar in Dance History and Philosophy. F.
Credits: 4
Survey of the historical development of the art dance with reference to social contexts, periods and cultures involved; seminars, readings, and observations of various cultural events and audio-visual materials.

Dance Activities

DAA 3102 Modern Dance III. F, S.
Credits: 3; Prereq: DAA 2101; consent of instructor.
Modern dance including experiences in intermediate level technique, readings, observations and movement exploration exercises emphasizing literal expressive modes. May be repeated with change of content up to a maximum of 9 credits.

DAA 3700 Dance Composition. F, W, S.
Credits: 2; Prereq: DAE 2320 or permission of the Chairman of the Department.
Modern dance composition with respect to form, design, dynamics, and rhythm.

DAA 4103 Modern Dance IV. W.
Credits: 3; Prereq: DAA 3102; consent of instructor.
Modern dance including experiences in advanced level technique, readings, observations, informal performance and movement exploration exercises emphasizing non-representational expressive modes. May be repeated with change of content up to a maximum of 9 credits.

Dance Education

DAE 2320 Modern Dance Teaching Methods. F, W, S.
Credits: 3
Skills and teaching techniques.

DAE 2360 Folk and Social Dance. F, W, S, SS.
Credits: 3
Skills and teaching techniques.

DAE 3370 Rhythmic Activities for Elementary School Children. F.
Credits: 3; Prereq: Upper Division status or permission of the Chairman of the Department.
The teaching of rhythmic skills and dance movements for elementary school children.

Physical Education Acts (Professional) — Object Centered, Land

PEO 1011C Softball and Flag Football. F, W, S.
Credits: 2
Skills and teaching techniques.

PEO 1511C Soccer and Related Sports. F, W.
Credits. 2
Skills and teaching techniques: soccer, speedball, and gatorball.

PEO 1521 Volleyball and Team Handball. F, W, S.
Credits: 2
Skills, strategy and teaching techniques of volleyball and team handball.

PEO 2031C Recreational Activities I. F, W, S, SS.
Credits: 2
Skills, strategy and teaching techniques of volleyball and team handball.

PEO 2032 Recreational Activities II. F, W, S, SS.
Credits: 2
Skills and teaching techniques for badminton, racquetball and table tennis.

PEO 2121C Golf. F, W, S, SS.
Credits: 2; Prereq: Skill in basic fundamentals.
Advanced skills and teaching techniques.

PEO 2341C Tennis. F, W, S, SS.
Credits: 2; Prereq: Skill in basic fundamentals.
Advanced skills and teaching techniques.

PEO 2561 Field Hockey, Weight Training and Conditioning. F, W.
Credits: 3
Skills, strategy, and teaching techniques in field hockey. Skills and teaching techniques for weight training and conditioning activities including jogging. Closed to those students with credit in PEP 2401 or PEP 2421.

PEO 3041C Games and Sports for Elementary School Children. S.
Credits: 3; Prereq: Upper Division status or permission of the Chairman of the Department.
The teaching of sports and games in the elementary school physical education program.

PEO 3124 Coaching Golf. W.
Credits: 2; Prereq: PEO 2121 or permission of the Chairman of the Department.
Types of play, strategy, practice organization, team selection, conduct of matches and tournaments and equipment.

PEO 3213 Officiating III. S.
Credits: 1; Prereq: PEO 1011 or permission of instructor.
Application of rules and techniques of officiating softball or other spring sports. Includes practical experience.

PEO 3214 Coaching Softball. F.
Credits: 2; Prereq: PEO 1011 or permission of the Chairman of the Department.
Systems of play, strategy, conditioning, practice organization, team selection, conduct of games and tournaments and equipment selection.

PEO 3219C Coaching Baseball. F.
Credits: 2; Prereq: Permission of the Chairman of the Department.
Strategy, conditioning, practice organization, team selection, conduct of games, and equipment selection.

PEO 3323 Officiating I. F.
Credits: 1; Prereq: PEO 1521 or permission of instructor.
Application of rules and techniques of officiating volleyball or flag football or other fall sports. Includes practical experience.

PEO 3324 Coaching Volleyball. S.
Credits: 2; Prereq: PEO 1521 or permission of the Chairman of the Department.
Systems of play, strategy, conditioning, team organization, conduct of matches and tournaments.

PEO 3344 Coaching Tennis. F.
Credits: 2; Prereq: PEO 2341 or permission of the Chairman of the Department.
Strategy, conditioning, practice organization, team selection, conduct of matches and tournaments, and equipment selection.

PEO 3514 Coaching Soccer. W.
Credits: 2; Prereq: PEO 1511 or permission of the Chairman of the Department.
Systems of plays, strategy, conditioning, team organization, conduct of games and tournaments.

PEO 3621C Basketball. F, W, S.
Credits: 2
Skills, rules, fundamentals of offensive and defensive basketball, strategy and teaching methods.

PEO 3623 Officiating II. W.
Credits: 1; Prereq: PEO 3621 or permission of the instructor.
Application of rules and techniques of officiating basketball or other seasonal sports. Includes practical experience.

PEO 3624 Coaching Basketball. S.
Credits: 2; Prereq: PEO 3621 or permission of the Chairman of the Department.
Systems of play, strategy, conditioning, practice organization, team selection, conduct of games and equipment selection.

PEO 3644C Coaching Football. S.
Credits: 2; Prereq: Permission of the Chairman of the Department.
Fundamentals of offensive and defensive football, systems of play, strategy, scouting techniques, organization of practice, and rules interpretations.

Physical Education Acts (Professional) — Performance Centered, Land

PEP 1301C Track and Field. F, W, S.
Credits: 2
Skills and teaching techniques.

PEP 2201C Gymnastics. F, W, S.
Credits: 3; Prereq: Skill in basic fundamentals.
Advanced skills and teaching techniques.

PEP 2401 Martial Arts, Weight Training and Conditioning. F, S.
Credits: 3
Skills, strategy, and techniques of teaching judo, karate, and self defense. Skills and teaching techniques for weight training and conditioning activities including calisthenics and jogging. Closed to those students with credit in PEO 2561 or PEP 2421.

PEP 2421C Wrestling, Weight Training, and Conditioning. W, S.
Credits: 3
Skills, strategy, and teaching techniques in wrestling. Skills teaching techniques for weight training and conditioning activities including circuit training, isometric programs, calisthenics, and jogging. Closed to those students with credit in PEO 2561 or PEP 2401.

PEP 3203C Educational Gymnastics for Elementary School Children. W.
Credits: 3; Prereq: Upper Division status or permission of the Chairman of the Department.
A study of the nature and teaching methods of educational gymnastics.

PEP 3204C Coaching Gymnastics. W.
Credits: 2; Prereq: PEP 2201 or permission of the Chairman of the Department.
Methods of coaching gymnastics and the conduct of meets.

PEP 3304 Coaching Track and Field. W.
Credits: 2; Prereq: PEP 1301 or permission of the Chairman of the Department.
Systems of play, strategy, conditioning, practice organization, team selection, and conduct of meets.

PEP 3424 Coaching Wrestling. F.
Credits: 2; Prereq: PEP 2421 or Permission of the Chairman of the Department.
Strategy, conditioning, practice organization, team selection, conduct of matches and tournaments and equipment selection.

Physical Educational Acts (Professional) — Water, Snow, Ice

PEQ 1121C Swimming. F, W, S, SS.
Credits: 2; Prereq: Sufficient skill to pass a basic swimming test.
Advanced skills and teaching techniques.

PEQ 2141L Synchronized Swimming. S.
Credits: 2; Prereq: PEQ 1121 or permission of the Chairman of the Department.
Individual, dual, and group techniques; composition and production.

PEQ 3124C Coaching Swimming and Diving. W.
Credits: 2; Prereq: PEQ 1121 or permission of the Chairman of the Department.
Methods of coaching swimming teams including the conduct of meets.

Physical Education Theory

PET 3000 Foundations of Physical Education. F, W, S, SS.
Credits: 3
Background, nature, purpose and contributions of contemporary physical education.

PET 3127 American Physical Education and Sport. F, W, S, SS.
Credits: 3; Prereq: Upper division status or permission of the Chairman of the Department.
The development of sport and physical education in the United States from Colonial America to the present.

PET 3212 Foundations and Principles of Coaching. W, SS.
Credits: 3; Prereq: Upper division status or permission of the Chairman of the Department.
Introduction to the foundations and principles of coaching in athletics. Topics include individual differences, motivational dimensions, sport as a social phenomenon, factors affecting performance and current research trends.

PET 3230 Theories of Skill Acquisition and Motor Development. F, W, S, SS.
Credits: 3; Prereq: Upper division status or permission of the Chairman of the Department.
This course is designed to provide background for understanding, analyzing and teaching skills relating to sports and dance. Attention is given to specific aspects of psychomotor development and theoretical models of skill acquisition.

PET 3320C Applied Human Anatomy. F, W, S, SS.
Credits: 4; Prereq: APB 2153 or equivalent.
Study of the human body from a health standpoint. Designed to meet the needs of physical educators, health educators, recreation therapists, and other disciplines interested in the anatomy of the human body.

PET 3340C Kinesiology of Motor Skills, F, W, S, SS.
Credits: 3; Prereq: PET 3320, PHY 2004 or permission of the Chairman of the Department.
Fundamentals of statics, kinematics and kinetics related to sports and dance skills. Laboratory experience in biomechanical research, cinematography and film analysis.

PET 3350C Applied Human Physiology. F, W, S, SS.
Credits: 4; Prereq: PET 3320.
Study of the normal function of the human body as related to the fields of physical education, health education, recreation therapy and other related disciplines.

PET 3360 Physiology of Exercise and Training. F, W, S, SS.
Credits: 3; Prereq: PET 3350 or permission of the Chairman of the Department.
Effects of physical exercise and athletic training on human function and structure.

PET 3430 Physical Education Program in the Elementary School. F.
Credits: 3; Prereq: Upper Division status or permission of the Chairman of the Department.
The beginning course for students planning a concentration in elementary school physical education. Includes philosophy, overview of program, facilities and equipment needed, and evaluation procedures. Not open to students who have completed PET 3461.

PET 3461C Physical Education in the Elementary School. F, W, S, SS.
Credits: 3; Prereq: Upper Division status or permission of the Chairman of the Department.
Organization and conduct or physical education activities for the elementary school. There are special sections designed only for students majoring in elementary education who have access to children in a group or school situation.

PET 3590 Professional Seminar in Physical Education. F, W, S, SS.
Credits: 1; Prereq: Upper Division status or permission of the Chairman of the Department.
The student's organic fitness, body composition, psychomotor, cognitive proficencies related to physical education activities will be assessed. In addition, reading and writing deficiencies will be identified and a remedial program will be prescribed. The student also must provide evidence of professional involvement.

PET 3640C Adapted Physical Education with Lab. F, W, S, SS.
Credits: 3; Prereq: PET 3320C or equivalent.
The program of physical education as applied to individuals with physical and other handicapping conditions. Includes physical descriptions of disabilities, care of a handicapped person, psychosocial implications, and other pertinent aspects of growth and development that affect atypical individuals. Supervised lab experiences working with the handicapped.

PET 3940 Introductory Field Experiences in Physical Education I. F, W, S.
Credits: 1; Prereq: Upper Division status or permission of the Chairman of the Department.
Orientation to teaching through planned experiences in a local elementary school, Grades K-2 and Grades 3-5.

PET 3944 Introductory Field Experiences in Physical Education II. F, W, S.
Credits: 1; Prereq: Upper Division status or permission of the Chairman of the Department.
Orientation to teaching through planned experiences in a local middle school and senior high school.

PET 4410 Administration of Physical Education. F, W, S, SS.
Credits: 4
Fundamental principles of developing, administering, and supervising public school programs of physical education including intramurals.

PET 4416 Administration of Athletics. F, W, S, SS.
Credits: 3; Upper Division status or permission of the Chairman of the Department.
Fundamental principles and current problems in administering public school programs in interscholastic athletics.

PET 4442C Physical Education in the Secondary School. F, W, S.
Credits: 5; Prereq: EDE 4203-ESE 4011. Limited to physical education majors in the term prior to student teaching. Materials, content, and techniques in teaching physical education in the

secondary school. Includes field experience in local schools.

PET 4510 Measurement and Evaluation with Lab. F, W, S, SS.
Credits: 3
Techniques in objective measurement and evaluation of physical fitness, motor skills, motor ability, nutritional status, and other activity related problems. Test construction and grading techniques. Supervised lab experiences in test administration.

PET 4622C Prevention and Care of Athletic Injuries. F, W, S, SS.
Credits: 3; Prereq: PET 3320 and PET 3350 or equivalent.
Prevention of athletic injuries, including protective equipment, safe facilities, and proper supervision of practice and contests. Recognition, referral and follow-up of injuries in athletics. Legal implications of athletic training. Common taping techniques and therapeutic modalities.

PET 4905C Variable Topics in Physical Education. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of Chairman of the Department.
Offered upon request of students to meet special interest which are not adequately provided for in other courses.

PET 4941C Field Experience in Elementary School Physical Education. F, W, S.
Credits: 3; Prereq: PET 3461 or equivalent.
Supervised experience in a local elementary school.

PET 4943 Practicum in Coaching. F, W, S, SS.
Credits: 2 to 6; Permission of the Chairman of the Department
Supervised experience in coaching.

PET 4948 Practicum in Physical Education. F, W, S, SS.
Credits: 1 to 16; Prereq: Permission of the Chairman of the Department.
Practical experience in such speciality areas as adult fitness programs, health clubs, exercise testing laboratories, clinical laboratories and athletic training rooms. May include senior thesis with oral defense.

GRADUATE COURSES

Physical Education Theory

PET 6015 Interpretations of Physical Education.
Credits: 3

PET 6145 Problems in Physical Education.
Credits: 4

PET 6235C Nature and Bases of Motor Performance.
Credits: 4

PET 6346C Biomechanics in Human Motion.
Credits: 4

PET 6365C Physiological Bases of Physical Education.
Credits: 4

PET 6368L Practicum in Exercise Physiology.
Credits: 3

PET 6416 Problems in the Administration of Athletics.
Credits: 4

††Grading is on a S-U basis only.

PET 6425 The Physical Education Curriculum.
Credits: 4

PET 6445 The College Physical Education Program.
Credits: 4

PET 6515C Evaluation Procedures in Physical Education.
Credits 3

PET 6905 Directed Independent Study.
Credits. 1 to 5. May be repeated with change of content to a maximum of 10 credits.

PET 6910L Supervised Research.
Credits: 1 to 5††

PET 6925 Workshop Series in Physical Education.
Credits: 1 to 10

PET 6932 Seminar in Physical Education.
Credits: 2. May be repeated with change of content.

PET 6940L Supervised Teaching.
Credits: 1 to 5††

PET 6971L Master's Research.
Credits: 1 to 15††

RECREATION
College of Physical Education, Health, and Recreation

INSTRUCTIONAL STAFF 1977-78

Varnes, P.R., Chairman; Cato, B.M.; Eckdahl, J.; Gamble, D.; Gilkinson, B.; Hall, L.T.; Hester, J.D.; Leilich, R.E.; McCall, G.E.; Regna, J.L.

LEI 2000 Introduction to Recreation and Leisure. F, W, S, SS.
Credits: 3
Provides for the development of an understanding of the various roles that recreation has in our contemporary society and provides students an opportunity to examine recreation as a potential profession.

LEI 3140 Philosophy and History of Recreation. F, W, S.
Credits: 3
An overview of the various perspectives of recreation, leisure and play with the intent of providing students a philosophical base on which to interpret the recreation profession.

LEI 3260 Outdoor Recreation Trends and Issues. F, W, S, SS.
Credits: 3
Examines trends and issues of outdoor recreation which will include such topics as history, use of the outdoors, recreation and the environment, and outdoor recreation agencies.

LEI 3320C Leadership in Social Recreation. F, W, S, SS.
Credits: 4
Leadership principles and planning of conducting social recreation programs.

LEI 3330C Camp Counseling. F, W, S, SS.
Credits: 4
The training of counselors for organized camping, including crafts, nature, cooking, and informal activities.

LEI 3400 Recreation Programs. W.
Credits: 4; Prereq: Upper Division status, PHR 245.
Planning programs and activities for various recreation settings, especially community recreation.

LEI 3507C Special Events: Administration and Programming.
Credits: 3
Budgeting, organizing, promoting, planning, and related activities necessary to conduct special recreational events.

LEI 3508C Sports Activities: Administration and Programming. F, W, S.
Credits: 3
Budgeting, tournament organization, promotion and related activities necessary to conduct sports activities in a recreation program.

LEI 3540 Management of Recreation Centers. F, W, S, SS.
Credits: 4
Introduction to leisure time activities including facilities, personnel and programs.

LEI 3600 Planning and Maintenance of Leisure Facilities. F, W, S.
Credits: 3
Planning for, budgeting for, site selection, layout of and maintenance of recreational facilities.

LEI 3921 Field Experience in Recreation. F, W, S.
Credits: 4; Prereq: or coreq: PHR 344 and PHR 345.
Eight hours of weekly laboratory work to arrange. Supervised experience in the conduct of a variety of recreation activities.

LEI 4500 Administration of Recreation. F, S.
Credits: 5
Limited to recreation majors, or those with permission of the instructor. Organizing and administering community and other recreation services, emphasizing problem solving.

LEI 4700C Recreation for Special Community Groups. F, W, S, SS.
Credits: 5; Prereq: PHR 347.
Principles and practices in planning and implementing programs in special community-group settings.

LEI 4711 Program Planning and Evaluation in Therapeutic Recreation. W, S.
Credits: 4; Prereq: PHR 445.
Advanced study in planning programs and evaluation in Therapeutic Recreation.

LEI 4760C Leisure, Recreation and the Older Adult.
Credits: 4
An indepth study of the responsibilities and opportunities in providing recreation services for the older adult.

LEI 4770 Leisure Services for the Socially Deviant. F, S.
Credits: 5
Introduces the student to the various leisure services delivery system that may be utilized as rehabilitative tools with the socially deviant population.

LEI 4880 Evaluation of Leisure Services. F, W, S.
Credits: 3
Methods, techniques and application of the evaluation process related to the wide variety of leisure services.

LEI 4905 Variable Topics in Recreation. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of Chairman of the Department.
Offered upon request of students to meet special interests which are not adequately provided for in other courses.

LEI 4940 Internship in Recreation. F, W, S, SS.
Credits: 16††; Prereq: Permission of the instructor.
Practical field experience in selected off-campus recreation programs.

GENERAL PHYSICAL EDUCATION
College of Physical Education, Health, and Recreation

INSTRUCTIONAL STAFF 1977-78

Moore, C.A., Chairman; Alexander, R.H.; Chafin, M.B.; Harlan, W.E.; Lee, P.A.; McCachren, J.R.; Moore, A.C.; Philips, S.L.; Potter, W.M.; Pye, R.L.; Ryan, M.P.; Scott, T.M.; Shields, D.A.; Stephens, F.W.; Waglow, I.F.; Welsch, W. R.

ADJUNCT INSTRUCTORS 1977-78

Allen, C.T.; Dong, N.; Lightner, R.L.; Murphey, M.

The elective program of physical education is dedicated to the development of personal fitness, recreation lifetime skills, and the shaping of desirable attitudes concerning health and physical activity. Specific courses which contribute to meeting these objectives are as follows:

Dance Activities

DAA 1100 Modern Dance. F, W, S.
Credits: 1

DAA 1300 Social Dance. W, S.
Credits: 1

DAA 1310 Square Dance. W, S.
Credits: 1

DAA 1340 Folk Dance. W, S.
Credits: 1

DAA 1500 Jazz Dance. F, W, S.
Credits: 1

Physical Education Acts (General) Object Centered, Land

PEL 1041L Recreational Games. F, W, S.
Credits: 1

PEL 1111 Bowling. F, W, S.
Credits: 1

PEL 1121 Golf. F, W, S.
Credits: 1

PEL 1141 Archery. F, W, S.
Credits: 1

PEL 1166L Riflery. W, S.
Credits: 1

PEL 1211 Softball. S.
Credits: 1

PEL 1321 Volleyball. F, W, S.
Credits: 1

PEL 1341 Tennis. F, W, S.
Credits: 1

PEL 1346 Badminton. S.
Credits: 1

PEL 1421L Handball. F, W, S.
Credits: 1

PEL 1441 Racquetball. F, W, S.
Credits: 1

PEL 1511 Soccer. F, W, S.
Credits: 1

PEL 1521L Team Handball. W. S.
Credits: 1

PEL 1541 Speedball. W.
Credits: 1

PEL 1571 Lacrosse. F, W, S.
Credits: 1

PEL 1621 Basketball. W, S.
Credits: 1

PEL 1646 Flag Football. W, S.
Credits: 1

PEL 2112 Advanced Bowling. W, S.
Credits: 1

PEL 2122 Advanced Golf. F, W, S.
Credits: 1

PEL 2142 Advanced Archery. F, W, S.
Credits: 1

PEL 2342 Advanced Tennis. F, W, S.
Credits: 1

PEL 2347 Advanced Badminton. S.
Credits: 1

PEL 2422L Advanced Handball. W, S.
Credits: 1

PEL 2512L Advanced Soccer. W.
Credits: 1

Physical Education Acts (General) Performance Centered, Land

PEM 1012 Adapted Program. F, W, S.
Credits: 1

PEM 1100 Basic Concepts of Physical Education. F, W, S.
Credits: 2

PEM 1102 Conditioning. F, W, S.
Credits: 1

PEM 1121L Yoga for Exercise and Fitness. F, W, S.
Credits: 1

PEM 1131 Weight Training. F, W, S.
Credits: 1

PEM 1146 Jogging. F, W, S.
Credits: 1

PEM 1201 Gymastics. F, W, S.
Credits: 1

PEM 1301 Track and Field. F, W, S.
Credits: 1

PEM 1351L Cycling. F, W, S.
Credits: 1

PEM 1421L Wrestling (M). W, S.
Credits: 1

PEM 1431L Judo. F, W, S.
Credits: 1

PEM 1441L Karate. F, W, S.
Credits: 1

PEM 1461L Fencing. F, W, S.
Credits: 1

PEM 2202 Advanced Gymnastics. F, W, S.
Credits: 1

PEM 2405L Self Defense for Women. W, S.
Credits: 2

PEM 2462L Advanced Fencing. W, S.
Credits: 2

Physical Education Acts (General), Water, Snow, Ice

PEN 1121 Swimming. F, W, S.
Credits. 1

PEN 1136C Skin and Scuba Diving. F, W, S.
Credits: 3; Prereq. PEN 2113 or Instructor approval.

PEN 1151 Springboard Diving. S.
Credits: 1

PEN 1171L Aquacises. F, S.
Credits: 1

PEN 1251L Canoeing. F, S.
Credits: 1

PEN 2113 Advanced Life Saving. F, W, S.
Credits: 2

PEN 2122 Advanced Swimming. F, W, S.
Credits: 1

PEN 2141 Synchronized Swimming. F, W, S.
Credits: 1

PEN 2231L Sailing. F, S.
Credits: 2

Physical Education Acts (Professional) Water, Snow, Ice

PEQ 2115 Water Safety Instructor. F, W, S.
Credits: 2; Prereq: PEN 2113.

PEQ 2126C Instructiors of Swimming for the Handicapped. W, S.
Credits: 2

PEQ 3109 Aquatic Management. W, S.
Credits: 4

Physical Education Theory

PET 3251 Sport and Society. W, S.
Credits: 3

PET 3254 Women in Sports. F, W, S.
Credits: 3

THE PHYSICAL SCIENCES
University College

INSTRUCTIONAL STAFF 1977-78

Pirkle, E.C., Chairman; Abbott, E.F.; Brookeman, J.R.; Broyles, A.A.; Chen, K.Y.; Cohen, H.L.; Cross, C.I.; Davis, R.W.; Donivan, F.F.; Dunkle, J.R.; Dunnam, F.E.; Eoff, K.M.; Garrett, R.E.; Helling, J.F.; Henry, J.A.; Leacock, R.J.; Lindquist, R.C.; Lynch, M.A.; Marcus, R.B.; Mundy, B.W.; Olsson, C.N.; Omer, G.C.; Peterson, L.R.; Roberts, L.H.; Yoho, W.H.; Yorton, J.B.

These physical sciences courses are designed to provide the student who may not take further work in physical sciences with an insight into how science has developed and with an understanding of basic phenomena which together make up the physical setting for human society and which have a direct bearing on the development of human society.

The following courses constitute recommended sequences with the courses listed in the sequential order in which they should be taken:
PSC 2501, ISC 2452, and PSC 2121
PSC 2501, PSC 2701, and ISC 2453
ISC 2400, ISC 2401, and ISC 2402

††Grading is on a S-U basis only.

Interdisciplinary Natural Science

ISC 2400 Fundamentals of Physical Science. F.
Credits: 4
The first quarter of the ISC 2400-2401-2402 sequence. Topics covered in this sequence of courses are from physics, chemistry, geology and astronomy and are selected to show the interrelations of these sciences. The nature and structure of scientific knowledge is emphasized. ISC 2400 topics include mechanics, Newtonian system, macroscopic properties of matter, energy, electricity and magnetism, and atomic structure.

ISC 2401 Fundamentals of Physical Science. W.
Credits: 3, Prerequisite: ISC 2400.
Continuation of ISC 2400. Applications of atomic structure to chemistry, also the chemical bond, chemical calculations, types of chemical reactions, and selected topics from organic chemistry.

ISC 2402 Fundamentals of Physical Sciences. S.
Credits: 3; Prerequisites: ISC 2400 and 2401.
Continuation of ISC 2400 and 2401. Selected topics from geology and astronomy: earth materials, processes shaping the earth, structure of the earth, paleontology, the solar system, evolution and properties of stars, and evolution and structure of the universe.

ISC 2452 Man's Interactions with the Physical Environment. F, W, S, SS.
Credits: 3; PSC 2501 is recommended for background.
Whereas PSC 2501 treats the factors of the physical environment which have influenced the development of civilizations, this course considers the impact that man is now having on the physical environment.

ISC 2453 Physical Science: Energy and Society. W, S.
Credits: 3
A study of energy, its sources and utilization, the interconversion of the forms of energy, the circumstances which have led to energy shortages, the political and social effects of the energy crisis, and the outlook for the future.

ISC 2454 Physical Foundations of Environmental Sciences. S.
Credits: 4; Prerequisite: ISC 2452 or equivalent.
An intermediate course on physical principles underlying man's interactions with the environment. Topics studied are selected to illustrate a wide range of physical considerations related to the environmental impact of technological developments. Basic knowledge of environmental principles is required.

ISC 3455 Water and Society. S.
Credits: 4
This course introduces some of the basic considerations of water as a part of society's resource base. The course includes properties of water, the hydrologic cycle, available supply, distribution of supply, water uses, management strategies, water quality, and water problems of the future.

Physical Sciences

PSC 1420 The Physical Sciences. W.
Credits: 4
Content consistent with the goals of PSC 2121. Admission by invitation.

PSC 1502 The Physical Sciences. S.
Credits: 4
Content consistent with the goals of PSC 2501. Admission by invitation.

PSC 1510 The Physical Sciences. F.
Credits: 4
Content consistent with the goals of ISC 2452. Admission by invitation.

††Grading is on a S-U basis only.

PSC 2121 Natural Regions. F, W, S, SS.
Credits. 4. (No prerequisites.)
A study of the natural regions of the United States, including the origin of physiographic features and the origin and occurrences of natural resources.

PSC 2191L Laboratory in the Physical Sciences.
Credits: 1; Coreq. or Prereq. any single quarter of PSC or ISC.
A laboratory inculcating scientific methods of investigations and using selected concepts in the Physical Sciences.

PSC 2501 Our Environment. F, W, S, SS.
Credits: 4
This course integrates materials from astronomy, meterology, climatology, geology and physical geography in considering those factors of the physical environment which influence civilization.

PSC 2507-2707-2901 The Physical Sciences: College Honors. PSC 2901: F; 2507: W; 2707: S.
Credits: 3 each
Content consistent with the goals of PSC 2501-ISC 2452-PSC 2121 structured to the abilities of qualified students.

PSC 2701 The Scientific Basis of Technology. W, S, SS.
Credits: 3; (No prerequisites.)
Scientific principles underlying modern technology, consideration of the nature of matter and energy, the relationship between the properties of matter and its structure, the conversion of energy resources into useful work, and problems associated with population growth and technology.

PSC 2936 The Physical Sciences: Special Topics. When needed.
Credits: 4
Topics and problems for individual and small group investigation; techniques of research, documentation, reports, critiques. Admission by permission of departmental chairman.

PSC 3402 Space and Society. S.
Credits: 4
This course considers the extent of man's exploration of the environment of extraterrestrial space. The present uses of the environment of space are stressed, and the possible future endeavors of man in this new environment are explored.

PSC 3900 Men and Concepts. W, S.
Credits: 4
How concepts in science develop shown through the use of case studies taken from the historical development of planetary astronomy and mechanics. Readings, some of them original scientific writings, illustrate the ideas of such men as Ptolemy, Copernicus, Kepler, Galileo and Newton. Emphasis is on how science works rather than explanations of what science knows.

PHYSICAL THERAPY
College of Health Related Professions

INSTRUCTIONAL STAFF 1977-78

Rutan, F.M., Chairman; Carlos, J., Jr.; Cieplinski, L.K.; Day, J.A.; Finley, M.C.; Fisher, N.P.; Holmes, T.H.; Winokur, C.; Wroe, M.C.

See also courses under Health Related Professions (HSC).

PHT 3001 Introduction to Physical Therapy and Community Health Concepts. F.
Credits: 3; Coreq: PHT 3100C, or permission of instructor.
Current trends in physical therapy and health care in relation to medical practice. Introduction to patient care.

PHT 3100C Human Anatomy. F.
Credits: 3; Coreq: PHT 3001, or permission of the instructor.
Open to physical therapy students and others with permission of instructor. The macroscopic structures of the human body with emphasis on the neuromuscular and musculoskeletal systems.

PHT 3213C Clinical Science 1. F.
Credits: 5; Coreq: PHT 3001, PHT 3100C.
Basic principles designed to develop students' skill in the analyses of physical disability and the application of exercises, gait; functional activity training and massage as treatment procedures.

PHT 3214C Clinical Science 2. S.
Credits: 4; Prereq: PHT 3213C.
Basic principles designed to develop students' skill in the evaluation and measurement of muscle function and strength and in the measurement of joint motion. An overview of normal growth and development.

PHT 3215C Physical Modalities. S.
Credits: 5; Prereq: APB 3203, PHT 3100C.
Principles and techniques of evaluation and treatment of pathological conditions with low frequency electricity and treatment with thermotherapy procedures.

PHT 3500 Community Health-Needs, Services, Structure and Implications. S, SS.
Credits: 3; Prereq: PHT 3213C or permission of the instructor.
Roles and functions of physical therapists in community health. History and current trends in provision of health care in the U.S. Levels and systems for the delivery of services. Employment practices in physical therapy.

PHT 3803 Physical Therapy in Community Facilities. F, W, S, SS.
Credits: 1††; Coreq: PHT 3001.
Orientation to local physical therapy clinics and other clinical facilities involved with patient care. Emphasis on how physical therapy serves this community.

PHT 3812 Junior Clinical Practicum. F, W, S, SS.
Credits: 2††; Prereq: PHT 3803.
Supervised practical experience designed to parallel classroom skills learned during the junior year. May be taken as an elective.

PHT 3813 Junior Clinical Practicum. F, W, S, SS.
Credits: 2††; Prereq: PHT 3803.
Supervised practical experience designed to parallel classroom skills learned during the junior year.

PHT 4111L Anatomy Dissection. F.
Credits: 4; Prereq: PHT 3100C.
Open to physical therapy students and others with permission of instructor. Intensive laboratory study of human anatomy with emphasis on the neuromuscular and musculoskeletal systems.

PHT 4232C Therapeutic Procedures 2. W, SS.
Credits: 4; Prereq: PHT 4234C.
Continuation of PHT 4234C.

PHT 4234C Therapeutic Procedures 1. F, S.
Credits: 4; Prereq: HSC 4540.
Principles and utilization of equipment and exercise related to the physically disabled.

PHT 4245 Survey of Patient Problems. SS.
Credits: 3; Prereq: PHT 4234C.
Discussion course designed to improve skills in patient evaluation and planning, processes of scientific inquiry, and psychological practices with the physically disabled.

PHT 4331C Survey of Surgical Procedures. W.
Credits: 4; Prereq: HSC 4517 and PHT 4822.
Medical lectures on etiology, pathology, symptomology and treatment of medical and surgical conditions.

PHT 4822 Clinical Practicum. F, W, S, SS.
Credits: 3††; Prereq: PHT 3214C; Coreq: PHT 4234C.
An internship-type experience providing students with the opportunity for supervised work in clinical settings.

PHT 4823 Clinical Practicum. F, W, S, SS.
Credits: 3††; Prereq: PHT 4234C; Coreq: PHT 4232C.
Continuation of PHT 4822.

PHT 4824 Internship. F, W, S, SS.
Credits: 4 to 12††; Prereq: Approval of Department Chairman.
Supervised field work experience in facilities approved by the Department. May be repeated with change of assignment up to a maximum of 18 credits.

PHT 4930 Seminar. SS.
Credits: 5; Prereq: PHT 3500 and PHT 4245.
Effective Communication and Management procedures; gram planning and problem solving in patient services.

PHYSICIAN'S ASSISTANT PROGRAM
College of Medicine

PAS 3000 Patient Evaluation 1. F.
Credits: 3
The first course in the sequence PAS 3000, 3001, 3002. Patient evaluation is a lecture-seminar-discussion course with extensive clinical exposure that introduces the student to techniques used in eliciting patient histories and performing physical examinations. Instruction is initially directed toward the collection and proper recording of data generated during the patient interview.

PAS 3001 Patient Evaluation 2. W.
Credits: 3
The second course in the sequence PAS 3000, 3001, 3002.

PAS 3002 Patient Evaluation 3. S.
Credits: 3
The third course in the sequence PAS 3000, 3001, 3002.

PAS 3003 Primary Care. S.
Credits: 5
This course will provide the student opportunities to develop skills in differential diagnosis, awareness of the social implications of the initial complaints and an orientation to preventive medicine. The content of the course will range from the newborn infant to the geriatric patient. The method of instruction will include case presentations and panel discussions by practicing physicians.

PAS 3005 Behavioral Dynamics. F.
Credits: 3
The purposes of this course are to enable the student to establish a relationship with his patient that will facilitate diagnosis and treatment; to assist the student in gathering information in an effective manner about the patient and his illness that is not available from other sources; and to improve the student's ability to give the patient an understanding of his illness and to support and direct the patient in his treatment.

PAS 3006 Community Health. F.
Credits: 3
A description of the development of key ideas concerning modern scientific medicine and broad social questions regarding the medical profession. Topics include: the social roles of patients as well as physicians, the public image of medicine, the impact of various historical epochs, and changing attitudes toward poverty and welfare will be presented. The various systems for the delivery of health care, the nature and implications of pending health care legislation, health care cost and payment mechanisms, and types of extension of health care services provided by both public and private agencies are examined. In addition, there will be discussion of the social and cultural aspects of health, dealing with the terminally ill, euthanasia, genetic engineering and human subject experimentation.

PAS 3007 Clinical Procedures and Techniques. S.
Credits: 4
This course is designed to provide the student with skills in performing basic laboratory procedures commonly used in primary care settings. The course also introduces the student to diagnostic and therapeutic techniques. Lectures and laboratory experiences are provided, as well as practical experience utilizing models and other training aids.

PAS 3020 Medical Science. W.
Credits: 5
A study of the most common diseases that impair the body's function or structure; providing a picture of the chain of events that lead to impairment; incidence prevalence and geographical distribution; prognosis. Emphasis is on respiratory diseases, cardiovascular disease, psychoneurotic probems, dermatologic conditions, gastrointestinal disease and urinary tract problems.

PAS 3021 Physiology. F.
Credits: 4
An intensive study of human physiology. Major emphasis will be placed on the establishment of sound physiological principles which underlie clinical sciences.

PAS 3022 Anatomy. W.
Credits: 5
An intensive study of human anatomy. Systemic and regional approaches will be utilized. Major emphasis will be placed on human dissection. The establishment of sound anatomical principles which underlie clinical sciences will be stressed.

PAS 3023 Pharmacology. W.
Credits: 2
The action and function of classes of drugs, use of specific drugs, contraindications and incompatibilities, side effects and their treatment, dosages, and calculations.

PAS 3024 Microbiology. S.
Credits: 3
A study of normal body flora and pathogenic microorganisms. Microbial physiology associated with pathogenicity of bacteria, viruses, fungi and common parasites; host responses to invasion of these organisms, diagnostic tests used for identification of pathogens, antimicrobial agents and fundamentals of immunology.

PAS 4004 Infectious Disease.
Credits: 6
A six-week rotation surveying the findings and effects of numerous pathogenic bacteria and fungi as they relate to infectious disease processes. The student is actively involved in an inservice rotation, primarily a consulting service. The student is required to perform a complete history and physical examination on the patient and is further required to correlate laboratory findings with the clinical manifestations of the infectious disease. The student is further introduced to the manifestations of the illnesses and the rationale for therapy.

PAS 4040 Emergency Room.
Credits: 6
The students are introduced to the busy emergency rooms of the major medical centers. They are exposed to the acutely ill and traumatized patients. The students learn to perform appropriate history and physical examinations on the acutely ill patient. Emphasis is placed on management and support measures of situations which are life-threatening.

PAS 4042 Student Infirmary.
Credits: 6
This six-week rotation is provided to the student who desires additional exposure to a clinical setting. The student will perform history and physical examinations and will have a further opportunity to be exposed to the illnesses and injuries common to the university students.

PAS 4100 General Medicine.
Credits. 6
A six-week rotation in which the student learns basic medical knowledge. The student is exposed to the common medical problems encountered on the in-patient medical service. The emphasis is on the history and physical examination as well as the processes required in the proper work-up and management of a patient. Opportunity is also available for the student to perform the usual ward therapeutic procedures.

PAS 4105 Rehabilitative Medicine.
Credits: 6
The student will spend six weeks in an institution which deals primarily with the rehabilitation of the spinal cord or stroke patients. The student will share time with the physical therapy department, learning the various techniques utilized on the disabled patient. The student is involved in the entire management and discharge planning of that patient requiring some type of continual custodial care. Exposure is also given to the various community services and agencies available to the patient in the rehabilitative centers.

PAS 4110 Hematology.
Credits: 6
During this six-week rotation the student performs a peripheral blood differential of white cells. The student further learns the principles of blood transfusions and the steps in management of untoward reactions to whole blood therapy. The student is introduced to procedures such as bone marrow aspiration and bone marrow biopsies. The student further demonstrates his ability to correlate the history and physical examination with the common hematologic problems normally seen on the hematology service.

PAS 4115 Cardiology.
Credits: 6
The cardiology rotation is of six weeks duration and designed to introduce the student to the basic cardiac abnormalities. The student is introduced to the EKG and the interpretation of both normal and abnormal tracings. The student is also exposed to the coronary care unit and its functions. The methods of performing necessary diagnostic procedures for the evaluation of disorders of the cardiovascular system are also studied.

PAS 4120 Neurology.
Credits: 6
This six-week rotation introduces the student to the common in-patient and out-patient neurologic disorders. The student emphasizes the complete neurologic history and physical examination and the techniques used on the service. The student is further introduced to the diagnostic and therapeutic procedures unique to the neurologic service.

PAS 4125 Psychiatry.
Credits: 6
During this six-week rotation, the student is introduced to patients admitted to the psychiatry service. The student participates in daily rounds and learns the proper use of various medications for various psychiatric disorders. Group therapy sessions are a major part of the students learning experience.

PAS 4140 ENT.
Credits: 6
This is a six-week clinical rotation. The student is introduced to the otolaryngology clinic and the patients most commonly seen in that clinic. Emphasis is placed on the common ear problems and the common throat problems seen in the rural areas. The student receives careful instruction the proper use of the appropriate instruments.

††Grading is on a S-U basis only.

PAS 4150 Renal.
Credits 6
During this six-week rotation, the student is asked to perform history and physical examinations on that patient with common nephrological problems. The student is introduced to the hemodialysis procedures and machinery. The student is further introduced to the principles of peritoneal dialysis.

PAS 4160 Gastroenterology.
Credits 6
This six-week rotation deals primarily with the diagnosis, pathophysiology and essentials of therapy of various gastroenterologic problems. The student learns to perform and interpret both nasogastric intubation and gastric analysis. Instruction in secretin tests, small bowel biopsies, proctosigmoidoscopies and gastroscopies is provided. The student is further instructed in the correlation of the results of the various diagnostic procedures with the clinical course of the patient.

PAS 4170 Rheumatology.
Credits. 6
A six-week rotation providing an in-depth exposure to rheumatologic disease. Students learn therapeutic techniques specifically related to the rheumatologic patient. Emphasis is placed on the history and physical examination on a consulting service.

PAS 4200 General Surgery.
Credits: 6
A six-week rotation exposing the student to a variety of clinical problems, routinely seen on the surgical services. Emphasis is placed on preoperative and post-operative management of the patient. Aseptic technique and operating room principles are emphasized. Management of the surgical patient, both in the operating room and on the ward are basic on this rotation.

PAS 4220 Plastic Surgery.
Credits. 6
A six-week rotation primarily designed to instruct the student in basic wound care. Also emphasized is surgical repair and management of the simple laceration. Some operating room exposure is available for the more extensive care and repair of wounds. Exposure to burns and burn treatment is also provided.

PAS 4240 Orthopedic Surgery.
Credits: 6
A six-week rotation providing exposure to the emergency room orthopedic patient as well as pre-operative and post-operative care of the surgical patient. In-hospital management as well as out-patient management of the orthopedic patient is emphasized. The student receives instruction in traction, splinting and casting techniques. The student is also given a broad background in more extensive orthopedic repairs in the operating room.

PAS 4260 Neurosurgery.
Credits: 6
During this six-week rotation, the student is taught an understanding of the problems unique in the diagnosis, treatment and management of the neurosurgical patient. The student gains experience in the operating room and further gains a working knowledge of the diagnostic techniques utilized and unique to the neurosurgical services.

PAS 4300 Pediatrics.
Credits: 6
This general pediatric rotation is of six weeks duration and is designed to introduce the student to the childhood illnesses and normal variations of growth and development. The student is encouraged to seek out third party histories and perform pediatric physical examinations. The student is further introduced to the newborn nursery as well as pediatric out-patient clinics and emergency rooms.

PAS 4305 Pediatrics, Genetics and Metabolism.
Credits: 6
During his six-week rotation, the student is exposed to pediatric patients with either genetic or metabolic disorders. The student is required to complete PAS 4300, General Pediatrics, prior to this rotation. The student gains expertise in following the genetic lines of a pediatric patient. The student is also exposed to the common metabolic problems seen most often on the service.

PAS 4320 Obstetrics and Gynecology.
Credits: 6
This six-week rotation is designed to introduce the student to the obstetrical service, the management of pregnancy, labor and delivery. It is further designed to introduce the student to pre- and post-natal complications. The rotation is also designed to introduce the student to the common gynecological problems and management of common female abnormalities.

PAS 4400 Family Practice
Credits: 6
This six-week rotation is designed to introduce the student to the family practice setting and the interpersonal relationships developed in that setting. The student is exposed to the family practice type patient and other members of the family unit. The student is exposed to the common diseases treated by the primary care practitioner and is further exposed to other members of the health care team. May be repeated with change of topic up to a maximum of 18 credits.

PAS 4420 Preceptorship.
Credits: 6
A six-week rotation primarily in a community based private practitioner's office. It is designed to introduce the student to the community setting. The student will make rounds with the physician and assist him in his office practice. Preferably, this preceptorship would be in a rural setting with a physician who is seeking to employ a physician's assistant.

PHYSICS
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Dunnam, F.E., Chairman; Adams, E.D.; Bailey, T.L.; Ballard, S.S.; Beebe, N.H.F.; Blue, R.A.; Brookeman, J.R.; Broyles, A.A.; Buchler, J.R.; Carr, T.D.; Chameides, W.L.; Connolly, J.W.D.; Dufty, J.W.; Flowers, J.W.; Garrett, R.E.; Green, A.E.S.; Hanson, H.P.; Hooper, C.F., Jr.; Ihas, G.G.; Isler, R.C.; Lebo, G.R.; Lowdin, P.O.; Micha, D.A.; Nevis, A.H.; Ohrn, N.Y.; Omer, G.C., Jr.; Parkinson, M.T.; Pepinsky, R.; Sabin, J.R.; Scott, T.A.; Smith, A.G.; Thomas, B.S.; Trickey, S.B.; Van Rinsvelt, H.A.; Ward, G.D.; Weller, H.R.; Worth, J.P.

Students planning on an undergraduate major in physics should consult the departmental major adviser, Dr. B. S. Thomas, Room 266, Williamson Hall. In preparation for this major program, the student should take the following courses in his Freshman and Sophomore years: MAC 3311-3312-3313-3314, MAP 3302; PHY 2040-2040L-2041-2041L-2042-2042L; PHS 2102-2103-2104; CHM 2045-2046-2047; GER 1120-1121-1122 or equivalent in French or Russian. The complete program, which includes a minimum of 46 credits in physics, will be selected under the guidance of the major adviser. For additional information, see College of Arts and Sciences entrance requirements.

Any physics major with an overall 3.0 or higher grade point average in a minimum of 24 credit hours of physics courses attempted may apply for the Departmental Honors Program in physics. Application should be made to the departmental adviser. Upon acceptance to the program the student will be assigned a supervisory committee composed of two faculty members which will recommend a program for the student which shall include the following minimum requirements: two physics courses selected from the 5000 level (or six equivalent credits in PHY 4905, excluding laboratories); two quarters (no less than a total of 4 credit hours) of PHY 4910L research; and two quarters of PHY 4930, preferably taken concurrently with PHY 4905 or 4910L. Award of Departmental Honors in physics will be made upon: completion of the approved curriculum, including the honors course requirements, with an overall 3.0 or higher grade point average in all physics courses attempted; and recommendation for honors by the student's supervisory committee, based in part on a final written report and oral presentation of the student's research in PHY 4905 or 4910L.

Physics

General Physics Courses: There are four course sequences in general physics: PHY 2002C-2003C; PHY 2040-2041-2042 and laboratories 2040L-2041L-2042L; PHY 2050-2051-2052 and laboratories 2050L-2051L-2052L; and PHY 2063C-2064C-2065C.

PHY 2002C-2003C is a two-term course sequence emphasizing the practical applications of basic physics to a wide range of professions including architecture, agricultural sciences, building construction, forest resources, and health related services.

PHY 2040-2041-2042 and the corresponding laboratory sequence PHY 2040L-2041L-2042L are intended for all physical science and engineering majors and are open to all students who are taking or will take the calculus sequence through MAC 3313. PHS 2102-2103-2104 are one-credit discussion sections in PHY 2040-2041-2042, respectively. These courses are required of all majors and are strongly recommended for all other students.

PHY 2050-2051-2052 and laboratories PHY 2050L-2051L-2052L are intended primarily for students not majoring in a physical science or an engineering field. These courses are usually taken by preprofessional students (pre-medical, pre-dental, etc.), especially those who have either not taken calculus or who do not plan to take the complete calculus sequence.

PHY 2063C-2064C-2065C constitute the honors sequence in general physics. Each course consists of lectures augmented with a combined discussion and laboratory session. Enrollment is by invitation or special permission; interested students are invited to contact one of the departmental advisers for more details.

PHY 1001C Elements of Physics. W, S.
Credits: 6; Prereq: One year of high school algebra or equivalent.
A terminal course presenting selected topics from all branches of physics. Primarily for non-science majors. The presentation of the course will include lectures, demonstrations, recitation problem-solving sessions, and laboratory.

PHY 2002C Applied Physics 1. F, W, S, SS.
Credits: 5; Prereq: One term of college mathematics.
A course emphasizing the practical applications of basic physics to a wide range of professions including architecture, agricultural sciences, building construction, forest resources, and health related services. Mostly mechanics motion, forces, energy, momentum, and wave motion.

PHY 2003C Applied Physics. 2. F, W, S, SS.
Credits: 5; Prereq: PHY 2002C.
Continuation of the sequence. Fluids, thermodynamics, electric and magnetic fields. Meters. Alternating current. Optics and modern physics.

PHY 2032 Physics for Skeptics. F, W, S, SS.
Credits: 4; Prereq: High school algebra or equivalent.
Directed to those who think that physics is a fearsome thing. Will utilize a minimum of mathematics to discuss basic ideas of modern physics, interpretation versus observation, aesthetic choice in physical theories, theories as games, and the implications of the modern view of nature. Includes demonstrations, experiments, and class discussion. Not available for undergraduate major credit.

PHY 2032L Laboratory for 2032. F, W, S, SS.
Credits: 1; Prereq: high school algebra.
The format is in keeping with the spirit and philosophy of PHY 2032. Experiments are open ended, do not follow a "cookbook" procedure, can be performed by anyone with some imagination and initiative, and include modern instruments such as a gas laser. Not available for undergraduate major credit.

PHY 2040 General Physics with Calculus 1. F, W, S, SS.
Credits: 3; Prereq: MAC 3311; Coreq: MAC 3312 and PHY 2040L.
Mechanics: statics and kinematics; work, momentum, energy, and power; conservation laws, rotational and harmonic motion.

PHY 2040L Laboratory for PHY 2040. F, W, S, SS.
Credits: 1; Coreq: PHY 2040.

PHY 2041 General Physics with Calculus 2. F, W, S, SS.
Credits: 3; Prereq: PHY 2040; Coreq: MAC 3313, and PHY 2041L.
Electrostatics: fields and potentials, electromotive force, circuits, electromagnetism, capacitance and inductance; magnetic properties of matter; electromagnetic radiation.

PHY 2041L Laboratory for PHY 2041. F, W, S, SS.
Credits: 1; Coreq: PHY 2041.

PHY 2042 General Physics with Calculus 3. F, W, S, SS.
Credits: 3; Prereq: PHY 2040; Coreq: MAC 3313, and PHY 2042L.
Elasticity, wave motion, and sound; heat, thermodynamics, and kinetic theory of gases; geometrical, physical, and quantum optics.

PHY 2042L Laboratory for PHY 2042. F, W, S, SS.
Credits: 1; Coreq: PHY 2042.

PHY 2050 General Physics 1. F, W, S, SS.
Credits: 4; Prereq: MAC 1132 or equivalent; Coreq: PHY 2050L.
Structure and properties of matter; kinematics, dynamics, and statics; momentum and energy; rotation, elasticity; vibration and wave motion; fluids.

PHY 2050L Laboratory for PHY 2050. F, W, S, SS.
Credits: 1; Coreq: PHY 2050.

PHY 2051 General Physics 2. F, W, S, SS.
Credits: 4; Prereq: PHY 2050; Coreq: PHY 2051L.
Electric charge, fields, and circuits; electromagnetism, applied electricity; temperature, expansion, heat transfer, thermal behavior of gases.

PHY 2051L Laboratory for PHY 2051. F, W, S, SS.
Credits: 1; Coreq: PHY 2051.

PHY 2052 General Physics 3. F, W, S, SS.
Credits: 4; Prereq: PHY 2050; Coreq: PHY 2052L.
Wave motion, sound, geometrical optics, wave optics, applied optics; electrons and photons; atoms and nuclei.

PHY 2052L Laboratory for PHY 2052. F, W, S, SS.
Credits: 1; Coreq: PHY 2052.

PHY 2063C General Physics Honors. F.
Credits: 5; Coreq: MAC 3312.
First course of the sequence PHY 2063-2064-2065. Topics are similar to those of PHY 2040-2041-2042, but in considerably more depth, with more individual instruction in the accompanying laboratory and discussion section. Enrollment is by invitation or special permission only.

PHY 2064C General Physics Honors. W.
Credits: 5; Prereq: PHY 2063C or special permission of the Physics Department; Coreq: MAC 3313.
Second quarter of the PHY 2063-2064-2065 sequence.

PHY 2065C General Physics Honors. S.
Credits: 5; Prereq: PHY 2064C; Coreq: MAC 3314.
Third quarter of the sequence PHY 2063-2064-2065C.

PHY 3018 The Physics of Photography. F.
Credits: 3
A popular-level survey of the physical basis of photography. The nature of light and color, the way lenses work; how films respond to light; Polaroid process; color photography. Illustrated by numerous applications. The use of mathematics is restricted to simple algebra.

PHY 3036 Frontiers of Science. F, W, S.
Credits: 1
Lectures by outstanding visiting scientists on topics of current interest. Discussions will include the social and environmental aspects of modern science and technology. Open to any student with an interest in the relevance of scientific thought and the scientific method of present-day life. May be repeated twice.

PHY 3123 Modern Physics 1. F, S, SS.
Credits: 3; Prereq: One year of college physics and calculus.
The first part of the sequence PHY 3123-4124. Includes atomic physics, relativity, theory of the solid state, basic concepts of quantum mechanics.

PHY 3223 Mechanics 1. F.
Credits: 3; Prereq: One year of college physics and calculus.
First part of the sequence PHY 3223-4224-5225. Introduction to solutions of differential equations; particle motion in one, two, and three dimensions; central forces; development of vector algebra calculus methods.

PHY 3323 Electricity and Magnetism 1. W.
Credits: 3; Prereq: One year of college physics and calculus.
The first part of the sequence PHY 3323, 4324, and 5325. Electric and magnetic fields, Maxwell's equations. Vector methods are introduced and employed.

PHY 3423 Optics 1. F.
Credits: 3; Prereq: One year of college physics and calculus.
The first part of the sequence PHY 3423 and 4424. Lenses, optical instruments, interference, diffraction, dispersion, and polarization.

PHY 3905 Individual Work. F, W, S, SS.
Credits: 3 to 6; Prereq: consent of instructor.
A guided course of study or special projects for selected undergraduates, primarily those with fewer than 15 credits of course work in physics or allied fields. May be repeated with change of content, up to a total of 12 credits.

PHY 4070 Introduction to Biophysics.
Credits: 4; Prereq: PHY 2052 or PHY 2042, one intermediate level physics course, and CHM 3200 or CHM 3210.
Biological units; biomolecular structures, functions, and interactions; bioenergetics sensory receptors; self-assembly of biosystems.

PHY 4124 Modern Physics 2. F, W.
Credits: 3; Prereq: PHY 3123, MAP 3302.
The second part of the sequence PHY 3123 and 4124.

PHY 4324 Electricity and Magnetism 2. S.
Credits: 3; Prereq: PHY 3323, elementary differential equations and vector algebra.
The second part of the sequence PHY 3323, 4324, and 5325.

PHY 4424 Optics 2. W.
Credits: 3; Prereq: PHY 3423, elementary differential equations and vector algebra.
The second part of the sequence PHY 3423 and 4424.

PHY 4454L Optics Laboratory. F, W, S.
Credits: 2; Prereq: PHY 3423; Coreq: PHY 4424.
Selected experiments in the refraction, dispersion, diffraction, and polarization of light.

PHY 4523 Fundamentals of Statistical Physics 1. S.
Credits: 3; Prereq: PHY 3123.
The first part of the sequence PHY 4523 and 5524. Introduction to thermodynamics, statistical mechanics, and kinetic theory.

PHY 4712L Electrical Measurements. F, W, S.
Credits: 2; Prereq: PHY 3323 or equivalent. Coreq: PHY 4324.
Laboratory experiments in electricity and magnetism.

PHY 4822L Atomic and Modern Physics Laboratory. F, W, S.
Credits: 2; Prereq: PHY 3123 or equivalent.
Selected experiments dealing with properties of electrons and atoms, the solid state, X-rays, cosmic rays, gaseous discharges, photoelectric and thermionic emission, and atomic radiations.

PHY 4905 Individual Work. F, W, S, SS.
Credits: 3 to 5; Prereq: 18 credits of physics.
Qualified undergraduate students may study selected topics in physics. May be repeated with change of content up to a total of 15 credits.

PHY 4910L Individual Laboratory Work. F, W, S, SS.
Credits: 1; Prereq: 18 credits of physics.
Qualified undergraduate students may pursue a special project in the laboratory. May be repeated, with change in content, up to a total of 4 credits.

PHY 4930 Research Seminar. F, S.
Credits: 1; Prereq: 18 credits of physics.
PHY 4905 or 4910 may be taken conjointly. Qualified undergraduates will take part in weekly seminars on research topics in physics, conducted by research faculty and the students themselves.

GRADUATE COURSES

PHY 5225 Intermediate Dynamics. S.
Credits: 3

PHY 5325 Electric and Magnetic Fields. F, SS.
Credits: 3

PHY 5445 Classical and Modern Optics. S.
Credits: 4

PHY 5524 Fundamentals of Statisical Physics 2. F.
Credits: 3

PHY 5624 Modern Physics 3. W, S.
Credits: 3

PHY 5722C Electronics 1. W.
Credits: 3

PHY 5723C Electronics 2. S.
Credits: 3

PHY 5905 Individual Work. F, W, S, SS.
Credits: 3 to 5

PHY 6077 Biophysical Models of Nerve Impulse Propagation.
Credits: 3

PHY 6078 Electrical Activity of the Nervous System.
Credits: 3

PHY 6246 Classical Mechanics.
Credits: 3

PHY 6346 Electromagnetic Theory 1.
Credits: 3

PHY 6347 Electromagnetic Theory 2.
Credits: 3

PHY 6536 Statistical Physics 1.
Credits: 3

PHY 6537 Statistical Physics 2.
Credits: 3

PHY 6556 Low Temperature Physics.
Credits: 3

PHY 6645 Quantum Mechanics 1.
Credits: 3

PHY 6646 Quantum Mechanics 2.
Credits: 3

PHY 6647 Quantum Mechanics 3.
Credits: 3

PHY 6648 Relativistic Quantum Mechanics.
Credits: 3

PHY 6668 Quantum Electrodynamics.
Credits: 3

PHY 6905 Individual Work.
Credits: 3 to 5

PHY 6910 Supervised Research.
Credits: 1 to 5††

PHY 6920 Departmental Seminar.
Credits: 1††

PHY 6935 Seminar in Modern Physics.
Credits: 1††

PHY 6940 Supervised Teaching.
Credits: 1 to 5††

PHY 6971 Master's Research.
Credits: 1 to 15††

PHY 7097 Advanced Topics in Theoretical Physics.
Credits: 4

PHY 7098 Advanced Topics in Experimental Physics.
Credits: 4

PHY 7247 Advanced Classical Mechanics.
Credits: 3

PHY 7348 Advanced Electromagnetic Theory.
Credits: 3

PHY 7538 Advanced Statistical Mechanics 1.
Credits: 3

PHY 7539 Advanced Statistical Mechanics 2.
Credits: 3

PHY 7939 Special Topics.
Credits: 3

PHY 7980 Doctoral Research.
Credits: 1 to 15††

Physics - Specialized

PHS 2102 Problem Solutions in General Physics 1.
Credits: 1; Coreq: PHY 2040.
Resource/discussion section for PHY 2040, emphasizing problem solving and mathematical techniques.

PHS 2103 Problem Solutions in General Physics (Calculus) 2. F, W, S, SS.
Credits: 1; Coreq: PHY 2041.
Resource/discussion section for PHY 2041.

PHS 2104 Problem Solutions in General Physics (Calculus) 3. F, W, S, SS.
Credits: 1; Coreq. PHY 2042.
Resource/discussion section for PHY 2042.

PHS 2802 Introduction to Acoustics. W.
Credits: 2; Prereq: MAC 1132 or equivalent.
The elements of wave motion, sound, and related phenomena for the non-science major. Vibrations, simple harmonic motion, standing waves, and resonance, applied to familiar examples. Non-periodic waves and noise.

PHS 4303 Nuclear Physics. S.
Credits: 3; Prereq: PHY 4124.
Elementary treatment of nuclear phenomena, including nuclear properties, stability and radioactive decay, scattering and nuclear reactions, interactions of nuclear radiations with matter, and nuclear forces.

††Grading is on a S-U basis only.

PHS 4330L Laboratory Techniques in Nuclear Physics 1. W.
Credits: 2; Coreq: PHS 4303, or consent of instructor.
The first part of the sequence PHS 4330 and S331L. Detection and energy measurement of particle and photon radiations. Determination of nuclear properties. Coincidence measurements, pulse-height analysis, and nuclear instrumentation. Nuclear reactions.

PHS 4805 The Physical Basis of Music. S.
Credits: 4; Prereq: MAC 1132, or consent of instructor.
Vibration and wave behavior as applied to musical instruments, with studies of the generation and reception of sound waves, musical intervals and scales, musical acoustics and musical electronics.

GRADUATE COURSES
Astronomy

AST 6165 Radiopropagation and Ionospheric Physics 1.
Credits: 3

AST 6166 Radiopropagation and Ionospheric Physics 2.
Credits: 3

AST 6167 Physics of the Earth's Upper Atmosphere.
Credits: 3

AST 6168 Physics of Planetary Atmospheres.
Credits: 3

AST 6169 Atomic Physics of Planetary Atmospheres.
Credits: 3

Physics—Specialized

PHS 5204 Optical Spectra.
Credits: 3

PHS 5304 Nuclear Physics.
Credits: 3

PHS 5331L Laboratory Techniques in Nuclear Physics 2.
Credits: 2

PHS 5354 Introduction to Particle Physics.
Credits: 3

PHS 5404 Introductory Solid State Physics. F.
Credits: 3

PHS 6156 Computer Methods in Physics.
Credits: 3

PHS 6209 Theory of Optical Spectra.
Credits: 3

PHS 6225 Quantum Theory of Matter 1.
Credits: 3

PHS 6226 Quantum Theory of Matter 2.
Credits: 3

PHS 6227 Quantum Theory of Matter 3.
Credits: 3

PHS 6247 Chemical Physics.
Credits: 3

PHS 6326 Theoretical Foundations of Nuclear Physics.
Credits: 3

PHS 6336 Experimental Foundations of Nuclear Physics 1.
Credits: 3

PHS 6337 Experimental Foundations of Nuclear Physics 2.
Credits: 3

PHS 6391 Seminar in Experimental Nuclear Physics.
Credits: 1

PHS 6493 Seminar in Low Temperature Physics.
Credits: 1

PHS 6606 Special Relativity.
Credits: 3

PHS 6616 General Relativity.
Credits: 3

PHS 7228 Theory of Atomic and Molecular Structure 1.
Credits: 3

PHS 7229 Theory of Atomic and Molecular Structure 2.
Credits: 3

PHS 7236 Atomic and Molecular Collisions 1.
Credits: 3

PHS 7237 Atomic and Molecular Collisions 2.
Credits: 3

PHS 7327 Theory of Nuclear Spectroscopy.
Credits: 3

PHS 7357 High Energy Theory 1.
Credits: 3

PHS 7358 High Energy Theory 2.
Credits: 3

PHS 7426 Physics of the Solid State 1.
Credits: 3

PHS 7427 Physics of the Solid State 2.
Credits: 3

PHS 7428 Physics of the Solid State 3.
Credits: 3

PLANT PATHOLOGY
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Purdy, L.H., Chairman; Bartz, J.A.; Berger, R.D.; Charudattan, R.; Cook, A.A.; Freeman, T.E.; Hiebert, E.; Jackson, L.F.; Kucharek, T.A.; Luke, H.H.; Miller, H.N.; Mitchell, D.J.; Pring, D.R.; Purcifull, D.E.; Roberts, D.A.; Schenck, N.C.; Simone, G.W.; Stall, R.E.; Zettler, F.W.

PLP 3002 Lectures in Basic Plant Pathology. F, S.
Credits: 2; Prereq: BOT 2021C recommended.
Principles of plant disease. Reasons for many victories and a few defeats in the continuing battles against disease in plants.

PLP 3003L Laboratory in Basic Plant Pathology. F, S.
Credits: 3; Prereq:. or Coreq: PLP 3002 or equivalent.
Diseases that dramatize the laws of Plant Pathology.

PLP 4102L Principles of Plant Disease Control. W.
Credits: 4; Prereq: PLP 3002 or equivalent.
The principles of Plant Pathology as they apply to the problems of commercial control of economically important diseases of agronomic, fruit, ornamental, and vegetable crops.

PLP 4905 Problems in Intermediate Plant Pathology. F, W, S, SS.
Credits: 1 to 5; Prereq: PLP 3002 or equivalent.
Individual study and research in areas of special interest to undergraduate students whose major field is Plant Pathology.

PLP 4931 Seminar in Plant Pathology. S.
Credits: 1; May be repeated once. Prereq: PLP 3002.
Discussion of current concepts and procedures related to the practice of Plant Pathology as a profession.

GRADUATE COURSES

PLP 5032L Intermediate Plant Pathology.
Credits: 3

PLP 5053L Tropical Plant Pathology.
Credits: 4

PLP 6223 Plant Virology.
Credits: 5

PLP 6224 Advanced Plant Virology.
Credits: 4

PLP 6241 Bacterial Plant Pathogens.
Credits: 5

PLP 6262 Fungal Plant Pathogens.
Credits: 5

PLP 6281 Field Plant Pathology.
Credits: 2

PLP 6291 Plant Disease Diagnosis.
Credits: 2

PLP 6303 Physiology of Parasitism.
Credits: 5

PLP 6402 Epidemiology of Plant Disease.
Credits: 5

PLP 6502 Pathogen Variability and Host Resistance.
Credits: 5

PLP 6905 Problems in Advanced Plant Pathology.
Credits: 1 to 5

PLP 6910 Supervised Research.
Credits: 1 to 5††

PLP 6921 Colloquium in Principles of Plant Pathology.
Credits: 1

PLP 6931 Seminar in Plant Pathology.
Credits: 1††

PLP 6940 Supervised Teaching.
Credits: 1 to 5††

PLP 6971 Master's Research.
Credits: 1 to 15††

PLP 7980 Doctoral Research.
Credits: 1 to 15††

PLANT SCIENCES—GENERAL
General and Cross-Departmental Courses

Ward, C.Y., Chairman.

The four Departments of Agronomy, Fruit Crops, Ornamental Horticulture, and Vegetable Crops have formulated this curriculum which consists of the following courses:

PLS 2031 Fundamentals of Crop Production. F, W, S, SS.
Credits: 4; Prereq: Introductory Botany course or equivalent.
Fundamental principles and practices used in the production, improvement, and use of commercial crops.

PLS 2201 Plant Propagation for the Amateur. S.
Credits: 2
Not open to majors in Agronomy, Fruit Crops, Ornamental Horticulture, or Vegetable Crops.

A laboratory course for nonmajors emphasizing basic principles and practices in seed and vegetative methods of propagating plants for the home.

PLS 3221 Plant Propagation. F, S.
Credits: 3; Prereq: PLS 2031. Must be taken concurrently with PLS 3221L.
Principles, practices, and physiological aspects of the propagation of horticultural and agronomic crops by cuttage, graftage, seedage, and other methods.

PLS 3221L Plant Propagation Laboratory. F, S.
Credits: 2; Prereq: PLS 2031. Must be taken concurrently with PLS 3221.
Practice in propagation of horticultural and agronomic crops by seedage, cuttage, graftage, and other methods.

PLS 3401 Plant Science Operations.
Credits: 1; Prereq: PLS 2031 or permission of the instructor.
An opportunity for the student to make an extensive evaluation of the application of scientific principles within the several specialized fields of plant science. Representative areas of production will be visited in a 4-5 day field trip taken during the interim between quarter terms. Registration must follow completion of trip.

PLS 4601 Weed Science. F.
Credits: 4; Prereq: BOT 3503C, BOT 3053L, and CHM 3200 or equivalent.
Chemical, biological, and mechanical weed control; weed identification and characteristics of herbicides.

PLS 4613 Aquatic Weed Control. SS.
Credits: 3; Prereq: PCB 3033 or BOT 3503.
Identification of Florida's aquatic weed problems and methods of chemical, biological, mechanical, and physical weed control. Specific topics will include herbicide residue, lake reclaimation, fish-plant interactions, and current laws regulating aquatic weed control.

PLS 4701 Field Plot Techniques. W.
Credits: 3
Techniques and procedures employed in field plot, greenhouse, and laboratory research. Interpretation and disposition of research results.

GRADUATE COURSES

PLS 5652 Herbicide Technology. S.
Credits: 4

PLS 6623 Weed Ecology. W.
Credits: 3

POLITICAL SCIENCE
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Clubok, A.B., Chairman; Bartley, E.R.; Button, J.W.; Conradt, D.P.; Damico, A.J.; Dauer, M.J.; Kelso, W.A.; Legg, K.R.; Lemarchand, R.; McQuown, O.R.; Maggiotto, M.A.; Morrison, J.F.; Munselle, W.G.; Rosenbaum, W.A.; Scher, R.K.; Schoultz, L.G.; Spanier, J.W.; Suarez, A.; Swanson, B.E.; Thompson, V.A.; Wittkopf, E.R.

The department offers general courses in political science, and more specialized offerings in public administration and international affairs.

Students majoring in political science are required to take POS 2041, American Federal Government; CPO 2002, Modern Political Systems; and INR 2002, International Relations. A total of 45 quarter hours is required for the major.

Political Science majors with an overall upper division gradepoint average of 3.3 or better are eligible to pursue honors work in the department. The honors program consists of three parts: (1) POS 4932 Honors Preparation, (2) POS 4935 Senior Honors Seminar, and (3) POS 4970 Senior Thesis.

Students selected for admission to the Senior Seminar in Political Science must have successfully completed two credits of POS 4932. The Senior Seminar consists of POS 4935, devoted to problems of conceptualization and research, and the Senior Thesis, POS 4970.

POS 4932 (1 credit each) is taken in conjunction with other Political Science courses at the 3000 or 4000 level. The student must secure permission of the instructor of the regular course to which they wish to add this special honors credit. POS 4932 itself consists of periodic tutorial sessions in which special reading and additional work relating to regular course is discussed. A separate grade is reported for the regular course and for POS 4932.

Political Science majors who have an overall upper division grade average of 3.5 or better and who satisfactorily complete a six hour Senior Thesis, will be graduated with High Honors. Those who have an overall upper division average of 3.3 or better and who complete a three hour Senior Thesis, will be graduated with Honors. Note: POS 4935 is given only in the Fall quarter, and POS 4970 in Winter and Spring. If you hope to graduate with honors see an advisor to plan your schedule.

Graduate courses and seminars are offered leading to both M.A. and Ph.D. degrees.

Comparative Politics

CPO 2002 Comparative Politics. F, W, S, SS.
Credits: 4
The classification of political systems according to institutional and developmental characteristics. Causes and costs of political stability and instability. Comparison will relate to contemporary political institutions and processes in specific countries.

CPO 3034 Politics in Developing Nations. W.
Credits: 4; Prereq: CPO 2002.
A general introduction to politics in "third world" nations, as examination of common problems and the various strategies for dealing with them.

CPO 3083 The Military in Politics. F.
Credits: 4
An analysis of the sources and uses of the political power of the Armed Forces, the causes and consequences of military intervention in politics, and contrasting patterns of civil-military relations in Western and non-Western societies.

CPO 3134 Politics in Britain and the Commonwealth. S.
Credits: 4; Prereq: CPO 2002.
The government and politics of Great Britain and the Commonwealth of Nations. Special emphasis on historical, cultural, social, and economic determinants of current institutions and policies. Constitutions, parties, legislatures, executives, civil service systems, law, and local government.

CPO 3204 African Politics. F.
Credits: 4; Prereq: CPO 2002.
African nationalism, political movements, and the study of governments in the African states.

CPO 3303 Introduction to Latin American Politics. F, S.
Credits: 4
An introduction to and overview of political patterns and political behavior in Latin America within a comparative and developmental perspective. Emphasis on the social, economic, and political factors shaping contemporary political structures and processes.

CPO 3513 Politics in China and Japan. W.
Credits: 4
An analysis of the government and political process in China and Japan. Special emphasis on the historical social and economic determinants of current political institutions and political behavior.

CPO 4046 Politics in Post-Industrial Societies. S.
Credits: 3
Comparative analysis of advanced industrial states with emphasis on diverse patterns of economic,

††Grading is on a S-U basis only.

social and political development as determinants of current political structures and policies.

CPO 4103 Western European Politics. S.
Credits 4, Prereq CPO 2002
A comparative analysis of the government and politics of the major western European countries. Special emphasis will be given to party systems and the social bases of politics in industrialized societies.

CPO 4304 Political Systems of Latin America: Modernization. Authoritarianism, Revolution. W.
Credits 4, Prereq CPO 3303 or equivalent experience
Political responses to modernization in Latin America with emphasis of authoritarian regimes in Argentina and Brazil and the role of revolution in Mexican and Cuban development.

CPO 4306 Contemporary Problems in Latin American Politics. F
Credits. 5; Prereq. CPO 3303 or equivalent experience.
The analysis of major themes and issues in the study of Latin American politics; the breakdown of democratic systems, dependency and imperialism, revolutionary movements and regimes. Will be offered with changing content.

CPO 4614 Eastern European Communist States. S.
Credits 4; Prereq: CPO 2002 or POT 4414
Comparative analysis of Communist parties and governmental systems of the Eastern European Communist government.

CPO 4633 Politics in the Soviet Union and Eastern Europe. W.
Credits: 4; Prereq: CPO 2002 or POT 4414.
A comparative analysis of the formal structures of government and political parties of the Soviet Union and Eastern Europe, the actual operation of their political systems, and the factors which have influenced their development.

GRADUATE COURSES

CPO 5065 Eastern European Communist States.
Credits 5

CPO 5105 Western European Politics.
Credits. 5

CPO 5145 Politics in Post-Industrial Societies.
Credits. 5

CPO 5305 Political Systems of Latin America: Modernization, Authoritarianism, Revolution.
Credits: 5

CPO 5306 Contemporary Problems in Latin American Politics.
Credits: 5

CPO 5636 Politics in the Soviet Union and Eastern Europe.
Credits: 5

CPO 6007 Seminar in Comparative Government.
Credits: 5

CPO 6107 Comparative Studies in Western European Political Systems.
Credits: 5

CPO 6207 Seminar in African Governments and Politics.
Credits: 5

CPO 6307 Seminar in Latin American Government and Politics I.
Credits: 5

CPO 6308 Seminar in Latin American Government and Politics II.
Credits: 5

CPO 6357 Seminar in Brazilian Government and Politics.
Credits: 5

CPO 6517 Seminar in Far Eastern Governments and Politics.
Credits: 5

CPO 6637 Seminar in Russian and Eastern European Governments and Politics.
Credits. 5

International Relations

INR 2002 International Relations. F, W, S, SS.
Credits: 4
The nature of international relations; nationalism, imperialism, militarism, armaments; history of international relations, foreign policies, functions and problems of democracy; international organization, the United Nations.

INR 3102 The U.S. and World Affairs. F, W, SS.
Credits: 4; Prereq: INR 2002 or instructor's permission.
An analysis of the tradition and development of American foreign policy with major emphasis on contemporary foreign policy problems.

INR 3103 The Making of American Foreign Policy. W.
Credits: 4; Prereq: INR 2002 or instructor's permission.
Examination of the principal factors influencing the formulation of U.S. foreign policy, including the international environment, information processing, personality factors, political culture, decision makers, and decision making. Consideration is also given to the institutional setting, including the President, Congress and public opinion.

INR 4114 American Military Strategy. S.
Credits: 4; Prereq: INR 2002 and Junior or Senior standing.
This course focuses on contemporary problems of deterrence, arms controls, limited conventional war and revolutionary warfare and upon the assumptions underlying the whole scope of national security policy.

INR 4204 Comparative Foreign Policy. F.
Credits: 4; Prereq: INR 2002 and Junior or Senior standing.
Special topics in international relations and foreign policy such as broad-based comparative analysis of foreign policy behavior, comparative international subsystems, reinterpretation of concepts such as nationalism and imperialism.

INR 4244 International Politics of Latin America. W.
Credits: 4; Prereq: INR 2002 or advanced standing in Latin American studies.
An analysis of the international politics of Latin America. Includes relations with the United States and non-hemispheric powers as well as the foreign policies of Latin American states vis-a-vis each other.

INR 4403 International Law. F.
Credits: 3; Prereq: INR 2002 and Junior or Senior standing.
Study of the main principles of the Law of Nations.

INR 4502 International Institutions. W.
Credits: 4; Prereq: INR 2002 and Junior or Senior standing.
Analysis of the political and functional aspects of international organization and administration alternating emphasis on either global organizations, such as the United Nations, or regional organizations such as the European Economic Community.

GRADUATE COURSES

INR 5207 Comparative Foreign Policy.
Credits: 5

INR 5245 International Politics of Latin America.
Credits: 5

INR 5334 American Military Strategy.
Credits: 5

INR 5505 International Institutions.
Credits: 5

INR 6087 Seminar in International Relations and Organization II.
Credits: 5

INR 6417 Seminar in International Law.
Credits: 5

INR 6607 Seminar in International Relations and Organization I.
Credits: 5

Political Science

POS 2041 American Federal Government, F, W, S, SS.
Credits: 5
Basic principles of the Federal Constitution. Civil Rights. Political parties and the electoral process. The structure and machinery of the federal government, including the Congress, President, and Judiciary.

POS 2112 American State and Local Government. F, W, S, SS.
Credits: 3
State constitutions, political parties, and politics. State legislatures, courts and chief executives. The functions of state governments. City and county government.

POS 3002 Analyzing Politics. S.
Credits: 5
An introduction to the theory and method of contemporary political analysis. Emphasis on alternative analytical frameworks, concepts, variables, measurement, and quantitative analysis of political data.

POS 3122 American State Politics. W.
Credits: 4; Prereq: POS 2041.
Analysis of selected topics in American state politics.

POS 3142 Urban Politics. F, S.
Credits: 5; Prereq: POS 2041.
An examination of urban problems and their resolutions.

POS 3173 Southern Politics. F.
Credits: 4; Prereq: POS 2041.
The changing politics of the South; two party development, urbanism, traditionalism, racisim.

POS 3204 Political Behavior. S.
Credits: 4
Factors influencing political decisions by the individual and by groups.

POS 3233 Political Opinion. W.
Credits: 4; Prereq: POS 2041.
Study of the definition and measurement of political opinion by polls and surveys, developmental character of opinions, variables in opinion formation, experiments in opinion measurement and the relation of political opinion to public theory.

POS 3253 Violence and Politics. F.
Credits: 4
Political violence in theory and practice. Effects of violence. How it may be limited. Will be offered with changing content and changing area emphasis.

POS 3263 Political Leadership. F.
Credits: 4
Conceptual and comparative study of leadership in a variety of political contexts.

POS 3273 Political Participation. S.
Credits: 4; Prereq: POS 2041.
Examination of popular participation in the political process and analysis of implications for political order in contemporary societies.

POS 3413 The Presidency. F, W, S, SS.
Credits: 4; Prereq: POS 2041.
The central role of the American Presidency in the political process. Emphasis on the contemporary institutional nature of that office and the behavior of its occupants.

POS 3443 Political Parties. F, W, S, SS.
Credits: 4; Prereq: POS 2041.
The composition, organization and structure of political parties and their role and relationships in the political process.

POS 3606 American Civil Liberties. F, S.
Credits: 4; (not open to those taking POS 4654).
Discussion of statutes and court decisions emphasizing First Amendment freedoms, equal protection of the law, due process and rights of defendants, implied rights, and the rights of women, juveniles, students, prisoners and the mentally ill.

POS 4246 Political Socialization. F.
Credits: 4
Examination of the processes by which politically important values and ideas are learned and the agents involved in these processes. The impact of the family, schools, social groupings (class, race, sex), and secondary groups. Political interest, efficiency, and participation considered. Attitudes toward political system.

POS 4284 Judicial Policy Making. W.
Credits: 4
An analysis of judicial policy making processes focusing on national level appellate courts.

POS 4424 Legislative Politics. F, W, S.
Credits: 4; Prereq: POS 2041 and Junior or Senior standing.
The politics of the legislative process. Recruitment of legislators. Formal and informal rules of behavior. Legislative-executive relations. The committee system. The impact of political parties, interest groups, and constituents on the legislative process.

POS 4603 American Constitutional Law. F.
Credits: 3; Prereq: POS 2041 and Junior or Senior standing.
A complete study and analysis of the Federal Constitution, with study and briefing of leading cases in constitutional law.

POS 4604 American Constitutional Law. W.
Credits: 3; Prereq: POS 4603

POS 4624 American Constitutional Law. S.
Credits: 3; Prereq: POS 4604
Cannot be taken by students who have taken POS 4654.

POS 4684 Administration of Justice. F, S.
Credits: 4
How the administration of justice operates through the courts and through law.

POS 4691 Social Effects of Law. W.
Credits: 4
Social results of supreme court decisions in areas such as reapportionment; civil rights; school prayer; integration. Results and public reaction.

POS 4905 Individual Work. F, W, S, SS.
Credits: 5
Readings and discussion in advanced topics of political science; requires Departmental permission.

POS 4925 Workshop in Political and Social Issues. F.
Credits: 4
A workshop course for advanced Juniors and Seniors majoring in political science on a topic involving practical application.

POS 4930 Special Topics Course.
Credits: 4
Selected topics in political science; precise course content will be announced in advance.

POS 4932 Honors Preparation. F, W, S, SS.
Credits: 1; Maximum of 4 credits allowed. Prereq: UF overall GPA of 3.3.
Must be taken in conjunction with other Political Science courses at the 300 or 400 level. Open to majors with overall UF GPA of 3.3. Students must secure permission of instructor of the course to which they wish to add this credit.

POS 4935 Senior Honors Seminar. F.
Credits: 4; Prereq: Senior major in department and permission of a departmental adviser.
An analysis of the problems of conceptualization and research in the various areas of political science.

POS 4936 Senior Colloquium. F, W, S.
Credits: 3; Senior standing in Political Science and permission of instructor required.
Special topics in Political Science on a colloquim basis for Seniors.

POS 4970 Senior Thesis. W, S.
Credits: 3; Prereq: POS 4935, rep. up to six hours.

GRADUATE COURSES

POS 5247 Political Socialization.
Credits: 5

POS 5425 Legislative Politics.
Credits: 5

POS 5685 Administration of Justice.
Credits: 5

POS 5692 Social Effects of Law.
Credits: 5

POS 5905 Individual Work.
Credits: 5

POS 5933 Special Topics Course.
Credits: 5

POS 6045 Seminar in American Federal Government.
Credits: 5

POS 6127 Seminar in State Government and Politics.
Credits: 5

POS 6157 Community Analysis.
Credits: 5

POS 6447 Seminar in Political Parties.
Credits: 5

POS 6617 Seminar in Public Law.
Credits: 5

POS 6706 Political Science Scope and Method.
Credits: 4

POS 6717 Empirical Political Theory.
Credits: 5

POS 6727 Political Model Building.
Credits: 5

POS 6736 The Conduct of Inquiry.
Credits: 5

POS 6747 Seminar in Political Behavior: Polimetrics.
Credits: 5

POS 6757 Survey Research.
Credits: 5

POS 6905 Individual Work.
Credits: 1 to 5

POS 6910 Supervised Research.
Credits: 1 to 5††

POS 6934 Special Topics Course.
Credits: 5

POS 6940 Supervised Teaching.
Credits: 1 to 5††

POS 6946 Practicum in Applied Political Science.
Credits: 5

POS 6971 Master's Research.
Credits: 1 to 15††

POS 7980 Doctoral Research.
Credits: 1 to 15††

Political Theory

POT 2001 Introduction to Political Theory. W.
Credits: 3
Consideration of major themes in political thought. Discussion of basic problems surrounding the individual's relationship to the state.

POT 3314 American Political Thought. W.
Credits: 4; Prereq: Junior or Senior standing in social sciences.
Analysis of major historical and recent interpretations of the American political system. Consideration of such theories as Madisonian democracy, pluralism, elitism, liberalism, and conservatism.

POT 4013 Great Political Thinkers: Ancient and Medieval. F.
Credits: 4
Study of major early political theorists including Plato, Aristotle, St. Augustine, and St. Thomas Aquinas. Emphasis on the principles of a just political order: natural law, civic virtue, constitutionalism. Analysis of church-state struggles and the emergence of the modern state.

POT 4044 Great Political Thinkers: Machiavelli to Marx. W.
Credits: 4
Study of selected political theorists from Machiavelli to Marx. Emphasis on the ideas of authority and freedom, obligation and consent in the writing of Hobbes, Locke, Rousseau, etc. Liberalism, conservatism, utilitarianism, idealism.

POT 4054 Contemporary Theories of the State. S, SS.
Credits: 4; Prereq: 10 hours of Political Science.
A study of the problems of power and justice under the modern state. Consideration of such political doctrines as anarchism, Marxism, fascism and democracy.

POT 4064 Analytic Political Theory: Ideas, Arguments and Political Choices. S.
Credits: 4
Analysis of the concepts and arguments surrounding power liberty, equality, representation and majority rule, obligation and disobedience, censorship and tolerance.

POT 4414 Communism: Theory and Practice. F, S, SS.
Credits: 5; Prereq: Junior or Senior standing; CPO 2002 or INR 2002 recommended, but not required.
Emphasis on the interrelationship of theory and practice in the evolution of Marxist-Leninist

††Grading is on a S-U basis only.

theory and developments in various communist political systems. The appeals of communism. Cadre training. The development of the international communist system.

GRADUATE COURSES

POT 6017 Seminar in Political Theory I.
Credits: 5

POT 6027 Seminar in Political Theory II.
Credits. 5

POT 6087 Latin American Political Theory.
Credits: 5

POT 6207 History of American Political Theory.
Credits: 5

POT 6611 Problems in Political Theory.
Credits: 5

Public Administration

PAD 4003 Introduction to Public Administration. F, W, S.
Credits: 4
The role of administrative agencies in the formulation and implementation of public policy. Emphasis on the politics of administration. Problems in administrative management.

PAD 4034 Problems of Public Administration and Policy. F, W.
Credits: 4; Prereq: PAD 4003 and Junior or Senior standing.
A treatment of the political-administrative dimensions of government planning, personnel, and finance.

PAD 4803 Urban Administration. S.
Credits: 4; Prereq: Junior or Senior standing.
An introduction to government administration and management in urban settings. Emphasis will be placed upon the programmatic aspects of urban governmental management. Topics included are program initiation, formulation, implementation, operation and evaluation.

GRADUATE COURSES

PAD 5035 Problems of Administration and Policy.
Credits: 5

PAD 5807 Urban Administration.
Credits: 5

PAD 6026 Public Administration Procedures.
Credits: 4

PAD 6053 Public Administration Problems.
Credits: 5

PAD 6108 Seminar in Public Administrative Behavior.
Credits: 5

PAD 6109 Seminar in Public Administrative Behavior.
Credits: 5

PAD 6327 Seminar in Government and the Planning Process.
Credits: 5

PAD 6836 Seminar in Comparative Public Administration.
Credits: 5

PAD 6946 Internship in Government.
Credits: 4

††Grading is on a S-U basis only.

Public Policy

PUP 2002 Setting National Priorities. F, W, S.
Credits. 3
A general introduction of public policy. The focus is on the selection, costs and consequences of policy goals in America.

PUP 3204 Politics, Ecologys and Energy. F, S.
Credits: 4
Problems of conservation, pollution. Group pressures and inter-action for and against development.

PUP 3323 Women in Politics. F.
Credits: 4
An investigation of women as a minority group in American politics and the various strategies now employed to change this status.

PUP 4003 Issues in American Politics. F, W, S.
Credits: 4; Prereq: POS 2041.
Examples of policy conflict drawn from urbanism, poverty and other areas of national socio-economic policy. Consideration of policy alternatives. Peaceful against violent solutions and effects of groups.

PUP 4104 Politics of Planning. W.
Credits: 4; Prereq: Junior or Senior standing in the social sciences or instructor's permission.
An assessment of the various political factors shaping the direction and tasks of the planner. The planning process will be viewed as having a number of social and economic consequences.

PUP 4313 Minorities and Change in American Politics. W.
Credits: 4
An analysis of the political strategies employed by various racial and ethnic minorities in the United States.

PUP 4404 Politics of Education. W.
Credits: 4; Prereq: Junior or Senior standing or instructor's permission.
The interrelationship of American political and educational systems; educational policymaking as political process; analysis of contemporary educational problems.

GRADUATE COURSES

PUP 5105 Politics of Planning.
Credits: 5

PUP 5405 Politics of Education.
Credits: 5

Social Sciences — Interdisciplinary

SSI 4601 Masterpieces in Social Sciences 1. F.
Credits: 4; Prereq: Senior standing and a major in the social sciences.
For advanced students with background work in the social sciences who have approval of their major adviser and the course chairman. Reading of classics in economics, history, political science, sociology and cultural anthropology.

SSI 4602 Masterpieces in Social Sciences 2. W.
Credits: 4; Prereq: Senior standing and a major in one of the social sciences.

SSI 4603 Masterpieces in Social Sciences 3. S.
Credits: 4; Prereq: Senior standing and a major in one of the social sciences.

POULTRY SCIENCE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Harms, R.H., Chairman; Arafa, A.S.; Damron, B.L.; Douglas, C.R.; Fry, J.L.; Janky, D.M.; Miles, R.D.; Voitle, R.A.; Wilson, H.R.

PSE 3211C Incubation, Brooding and Rearing. W.
Credits: 4
Chick embryology; hatchery equipment; incubation principles and practices; brooding equipment and methods; rearing of pullets; chick sexing and judging. Field trips to hatchery, broiler and egg operations.

PSE 4223 Poultry Management. S.
Credits: 4; Prereq: ASG 3003.
Management techniques for broilers, layers, turkeys, hatcheries, and commercial egg and poultry processing plants. Field trips to various poultry operations.

PSE 4311 Poultry Breeding. SS.
Credits: 3; Prereq: ASG 3313.
Genetic characteristics, breeds and principles of applied poultry breeding.

PSE 4411C Poultry Nutrition. F.
Credits: 4; Prereq: ASG 3403-3404
Nutritive requirements, feed formulation, economics and systems of feeding poultry. Production of various vitamin and mineral deficiencies in the laboratories.

PSE 4611 Poultry Products Technology. W.
Credits: 4, Prereq: ASG 3003.
Processing methods, composition, nutritive value, flavor palatability and shelf-life of poultry meat and eggs.

PSE 4905 Problems in Poultry Science. F, W, S, SS.
Credits: 1 to 4; May be repeated with change of content up to a maximum of 9 credits; Prereq: Permission of instructor.
Qualified students may choose an approved problem concerning some phase of Poultry Science.

PSE 4949 Full Time Practical Work Experience in the Poultry Industry. F, W, S, SS.
Credits: 1 to 4††; Prereq: Prior arrangement with advisor, approval of Department Chairman and Dean.

GRADUATE COURSES

PSE 6227 Advanced Poultry Management.
Credits: 4

PSE 6415 Advanced Poultry Nutrition.
Credits: 4

PSE 6522 Avian Physiology.
Credits: 3 to 5

PSE 6614 Advanced Poultry Products Technology.
Credits: 4

PSE 6905 Problems in Poultry Science.
Credits: 1 to 4
May be repeated with change of content up to a maximum of 12 credits.

PSE 6910 Supervised Research.
Credits: 1 to 5††

PSE 6931 Topics in Poultry Production.
Credits: 2 to 4
May be repeated with change of content up to a maximum of 9 credits.

PSE 6938 Graduate Seminar in Poultry Science.
Credits: 1
May be repeated with change of content up to a maximum of 3 credits.

PSE 6940 Supervised Teaching.
Credits: 1 to 5††

PSE 6971 Master's Research.
Credits: 1 to15††

PSYCHOLOGY

INSTRUCTIONAL STAFF 1977-78

Meyer, M.E., Chairman; Altmaier, E.M.; Anderson, R.J.; Berg, W.K.; Brackbill, Y.; Branch, M.N.; Cunningham, W.R.; Dewsbury, D.A.; Dixon, J.C.; Epting, F.R.; Fischler, I.S.; Froming; W.J.; Griggs, R.A.; Isaacson, R.L.; Johnston, J.M.; Landsman, T.; Levy, C.M.; Malagodi, E.F.; Miller, S.A.; Nevill, D.D.; Pennypacker, H.S.; Roberts, B.J.; Schlenker, B.R.; Scott, R.R.; Severy, L.J.; Shaw, M.E.; Swanson, R.M.; Teas, D.C.; Van Hartesveldt, C.; Waldbillig, R.J.; Webb, W.B.; White, K.D.; Ziller, R.C.

An undergraduate psychology major consists of a minimum of 50 hours of psychology. At least 40 of the 50 hours must be in upper division courses. At least 25 of the 50 hours must be taken at the University of Florida.

Courses must be distributed as follows:

1. Introductory level: PSY 2013 or its equivalent.
2. Foundation level: Students choose a minimum of two courses from each of these two groups:

   Group A: EAB 3002, EXP 3604C, PSB 3004, CBH 3003.

   Group B: DEP 3003, SOP 3004, PPE 3004.

3. Laboratory course: At least one of the following courses must be taken: DEP 4704, SOP 4214, EAB 4022C, EXP 4205L, EXP 4934C, PPE 4324C, PSB 4104L, CBH 4023C.
4. The student chooses enough additional courses from the 3000-, 4000- or 5000-level courses in psychology to meet the 50-hour minimum requirement.
5. Statistics: **Two courses in statistics are required, STA 3023 and STA 3024. STA 3023 is a prerequisite for all 4000- and 5000- level courses in psychology,** and thus should be taken prior to the laboratory course. It is recommended that STA 3024 be taken prior to or concurrent with the laboratory course. Hours earned in statistics will count toward the 45-hour elective requirement of the College.

Students intending to major in psychology, or transferring from another school with a psychology major, should obtain a brochure from the psychology department office, Room 114 PSY, and see a departmental advisor about their program of study.

Department Honors: Students who have completed a substantive and empirical research paper at the University of Florida may request that their research supervisor submit a copy of the paper to the Psychology Honors Committee for evaluation. The committee will recommend that the student graduate with Honors in Psychology if the project exhibits outstanding scholarship, and if the student has earned at least a 3.5 grade point average in all upper division courses and in all psychology courses. Deadlines for submission of research projects to the Undergraduate Coordinator, who serves as chairperson of the Psychology Honors Committee, are available in room 114 of the Psychology Building and in the office of the Undergraduate Coordinator.

Clinical Psychology

CLP 4144 Abnormal Psychology. F, W, S, SS.
Credits: 5; Prereq: PCO 3714 or PPE 3004.
The varieties of disordered experience and conduct are studied for their contribution to an understanding of more effective personal and social adjustment. Specific disorders include the neuroses and psychoses as well as psychosomatic and conduct disturbances.

GRADUATE COURSE

CLP 6169 Seminar: Psychology of Deviant Behavior.
Credits: 4; Maximum 8.

Comparative Psychology & Animal Behavior

CBH 3003 Basic Comparative Psychology. F.
Credits: 4; Prereq: PSY 2013.
Survey of the approaches to and concepts of the study of animal behavior as related to psychology.

CBH 4023C Laboratory Topics in Animal Behavior. W.
Credits: 4; Prereq. or Coreq: CBH 3003 or consent of instructor.
Laboratory techniques used in the study of a variety of behavioral patterns in a variety of species.

GRADUATE COURSES

CBH 5085 Seminar in Comparative Psychology.
Credits: 4; Prereq: CBH 3003.

CBH 6056 Comparative Psychology.
Credits: 4; Maximum of 12 credits; Prereq: PSB 6076 or consent of instructor.

CBH 7088 Advanced Seminar in Comparative Psychology. F, S.
Credits: 3; Prereq: CBH 6056.

Developmental Psychology

DEP 3003 Development Psychology. F, W, S, SS.
Credits: 4; Prereq: PSY 2013.
Theory and research on psychological development from prenatal stages through adulthood.

DEP 4115 Infancy and Early Childhood. F.
Credits: 5; Prereq: DEP 3003.
The course will emphasize the development of psychological process during infancy and early childhood as well as prenatal, perinatal and postnatal influences on development.

DEP 4204 Psychology of Exceptional Children. W, S.
Credits: 5; Prereq: DEP 3003.
Definition and proper classification of types of exceptional children, and the social, psychological, and physical factors involved. Problems of rehabilitation and psychological treatment of the exceptional child.

DEP 4305 Adolescent Psychology. W.
Credits: 5; Prereq: DEP 4115.
Biological, psychological, and sociological perspectives on adolescence. Includes such topics as dynamics of socialization, self-concept and identity, peer groups, and problems of adolescence.

DEP 4404 Psychology of Aging. S.
Credits: 4; Prereq: DEP 3003.
Topics in the field of gerontology from a lifespan developmental perspective, including the development of psychological processes in the aged, psychological problems of the aged, and theoretical and methodological issues in the study of the aged.

DEP 4704 Research Methods in Child Development. F, S.
Credits: 4; Prereq: DEP 4115.
Methodological approaches to the study of child behavior including experimental and observational techniques.

GRADUATE COURSES

DEP 5049 Seminar: Contemporary Issues in Developmental Psychology. S.
Credits: 4; Prereq: Senior psychology major or consent of instructor.

DEP 6059 Seminar: Special Topics in Developmental Psychology.
Credits: 1 to 4. May be repeated with change of content up to a maximum of 16 credits.

DEP 6099 Literature in Developmental Psychology.
Credits: 4

DEP 6409 Seminar: Adult Development and Aging. F.
Credits: 4

DEP 6796 Measurement in Developmental Research.
Credits: 4, Prereq: Consent of instructor

DEP 6799 Seminar: Current Research Methods in Developmental Psychology. F, W, S, SS.
Credits: 3; Prereq: DEP 6099.

DEP 6936 Special Topics in Developmental Psychology. F, W, S, SS.
Credits: 1 to 2; repeatable to a maximum of 30 credits with change of content.

DEP 7069 Seminar in Developmental Psychology; Cognitive Process.
Credits: 4; Prereq: the six graduate literature courses.

DEP 7118 Infancy and Early Childhood. S.
Credits: 4

DEP 7608 Theories of Child Development. W.
Credits: 4

Experimental Analysis of Behavior

EAB 3002 Introduction to Behavior Analysis. F, W, S, SS.
Credits: 4; Prereq: PSY 2013.
An introduction to and survey of the principles, methods, theories and applications of the Experimental Analysis of Behavior.

EAB 4022C Introduction to Laboratory Procedures in Behavior Analysis. F, W, S, SS.
Credits: 5; Prereq: EAB 3002.
An introduction to general laboratory procedures and apparatus employed in the experimental analysis of animal behavior. Daily laboratory sessions focus upon experimental treatments, apparatus programming, and data analysis.

EAB 4033C Strategies and Tactics of Human Behavioral Research. F.
Credits: 4; Prereq: EAB 3002.
Study of scientific approach to investigating human behavior in applied settings.

EAB 4049 Seminar in Experimental Psychology. F, SS.
Credits: 4; Prereq: EAB 3002 and consent of instructor.
Selected topics in research tactics, experimental studies, and theoretical developments in the area of the experimental analysis of behavior. May be taken up to a maximum of 8 credits with change in content.

EAB 4184 Behaviorism in Contemporary Society. S.
Credits: 4; Prereq: EAB 3002.
Consideration of the applications of behavioral science and technology to contemporary society with emphasis upon the implications of behavioristic theory and the experimental analysis of behavior.

EAB 4234C Stimulus Control. W.
Credits: 4; Prereq: EAB 3002.
The characteristics of the sensory systems approached from the orientation of an experimental analysis of each system's capabilities.

EAB 4509 Seminar in Motivation. W.
Credits: 4; Prereq: EAB 3002.
The aversive control of behavior (punishment, avoidance, escape, CER) as related to motivational processes.

Descriptions

PSYCHOLOGY

EAB 4704 Introduction to Applied Behavior Analysis. F, W, S, SS.
Credits: 5
Recording and charting human behavior. Tactics of behavior management; theory and research.

EAB 4724C Precise Behavior Management. F, W, S, SS.
Credits. 1 to 5
Applications of the principles of behavior analysis to problems involving human behavior change, particularly in an educational context. May be repeated with change in content to a maximum of 8 credits.

EAB 4764 Applications in Behavior Modification and Behavior Therapy. F, S.
Credits: 4; Prereq: EAB 3002.
Reading and discussion about behavioral applications with psychotic children, in mental retardation, with juvenile delinquency, in community mental health, within the family, in preschool and school settings, with alcoholism, with eating disorders, with physiological function and disease, with sexual disorders, with neuroses, with chronic mental hospital patients, and in behavioral technology.

EAB 4933C Seminar in Research Methods in Behavior Analysis. F, S.
Credits: 1 to 5; Repeatable up to maximum of 10 credits with change of content; Prereq: at least one of EAB 4003, EAB 4724, or EAB 4764, as appropriate to current content; and consent of instructor.
Advanced study of special research topics with which the student has had individual laboratory experience. Emphasis is upon research strategies and methodological considerations in specialized areas of experimentation.

GRADUATE COURSES

EAB 5055 Advanced Experimental Analysis of Behavior I. F.
Credits: 4; Prereq: EAB 3002 and consent of instructor.

EAB 5436 Behavioral Pharmacology. S.
Credits: 4; Prereq: EAB 3002.

EAB 5505 Motivation. W.
Credits: 4; Prereq: EAB 3002.

EAB 5935 Laboratory Methods in Psychology. W.
Credits: 4; Prereq: Upper level standing, one of EAB 3002, EXP 3604, PSB 3004, CBH 3003.

EAB 6056 Research Tactics in Experimental Analysis of Behavior.
Credits: 4; Prereq: EAB 5055 or 6098.

EAB 6098 Literature in Experimental and Applied Behavioral Analysis.
Credits: 4

EAB 6118 Theoretical Foundations of Behavior Analysis. W.
Credits: 4; Prereq: EAB 5055 or 6098 and permission of instructor.

EAB 6707 Applied Behavior Analysis.
Credits: 4

EAB 6708 Literature in Applied Behavioral Analysis. F.
Credits: 4; Prereq: EAB 5055 or 6098.

EAB 6719 Seminar: Strategies & Tactics of Human Behavioral Research. F.
Credits: 4, Prereq: EAB 6707.

EAB 6758 Measurement and Assessment of Behavior. S.
Credits: 4

††Grading is on a S-U basis only.

EAB 6937C Seminar: Special Topics in Experimental Analysis of Behavior.
Credits: 1 to 5; Prereq: EAB 6098.

EAB 7089 Advanced Seminar: Experimental Analysis of Behavior.
Credits: 4, Prereq: EAB 5055 or 6098 and permission of instructor.

EAB 7729C Advanced Seminar: Precise Behavioral Management.
Credits: 4

EAB 7738 Seminar in Behavioral Medicine.
Credits: 4; Prereq: 6 hours of human biology and permission of instructor.

EAB 7739 Advanced Seminar in Behavioral Medicine.
Credits: 4; Prereq: EAB 7738, 6 hours of human biology and permission of instructor.

EAB 7799 Advanced Seminar: Applied Analysis of Behavior.
Credits: 4; Maximum of 16 credits with change of content.

EAB 7888 Experimental Psychopathology.
Credits: 4; Prereq: EAB 5055 or 6098 and permission of instructor.

Experimental Psychology

EXP 3204 Perception and Human Senses. F, W, S, SS.
Credits: 4; Prereq: PSY 2013.
In inductory survey of the human senses and their role in perception, considering how we sense the physical environment and what factors influence our perception of it. An optional laboratory course, EXP 4205L, may be taken concurrently with this course.

EXP 3604C Introduction to Cognition and Perception. F, W, S, SS.
Credits: 4; Prereq: PSY 2013.
Factors influencing learning, memory, thinking, information processing, and perceiving, and consideration of the methods used to study these phenomenona. An optional laboratory course, EXP 4934C, may be taken concurrently with this course.

EXP 3933 Psychology of Sleep and Dreams. W.
Credits: 3
The factors that affect sleep: age, deprivation, shifts, day-to-day activities, individual differences, etc., and the effects of sleep variations on performance. Sleep anomalies: insomnia, sleep walking, etc. The meaning of dreams.

EXP 4104. Sensory Processing. F.
Credits: 4; Prereq: EXP 3204.
An introduction to information processing by sensory systems with consideration of the anatomy, physiology, and psychophysics of visual, auditory, olfactory, gustatory, and skin senses. An optional laboratory component, EXP 4205L, may be taken concurrently.

EXP 4124C Psychoacoustics I. F, W, S, SS.
Credits: 5; Prereq: SPA 3102.
Lectures, discussions and laboratory work on auditory stimulus, psychoaccoustical methodology; general models of auditory processing.

EXP 4205L Laboratory in Perception and Human Senses. F, W, S, SS.
Credits: 1 to 4; Coreq: EXP 3204, EXP 4104, or EXP 4214
Students collect, analyze, and evaluate data on specific problems related to sensory or perceptual abilities. Optional component of EXP 3204, 4104 or 4214. Designed for students preparing for graduate study in psychology. May be repeated with change of content up to a maximum of 4 credits.

EXP 4214
Students collect, analyze, and evaluate data on specific problems related to sensory or perceptual abilities. Optional component of PSY 335, 435, or 436. Designed for students preparing for graduate study in psychology. May be repeated with change of content up to a maximum of 4 credits.

EXP 4214 Visual Perception. F, W, S.
Credits: 4; Prereq: EXP 3204 or consent of instructor
Visual organization of space, time, motion and movement, and search for information. The study of acquisition of information: sensing, attending, perceiving, storing.

EXP 4254 Human Information Processing. F.
Credits: 4; Prereq: EXP 3604.
An exploration of man as a processor of information. Emphasis on visual and auditory processing, attention, and memory, and skilled performance. Topics discussed include Information and Systems theories, skilled reading, speech perception, limits of human performance, specialization of the hemispheres of the brain, and the effects of brain damage on processing. An optional laboratory component, EXP 4934C, may be taken concurrently.

EXP 4502C Human Learning. F.
Credits: 4; Prereq: EXP 3604.
Consideration of the factors which influence the acquisition of knowledge and skill. An optional laboratory component, EXP 4934C, may be taken concurrently.

EXP 4504C Human Memory. W.
Credits: 4; Prereq: EXP 3604.
Contemporary theories and data on human memory, with emphasis on the information processing approach. An optional laboratory component, EXP 4934C, may be taken concurrently.

EXP 4635 Thinking. S. SS.
Credits: 4; Prereq: EXP 3604.
Examination of the cognitive processes involved in human concept learning, problem solving, decision making and creativity. Consideration of the role of perception, learning and memory, motivation and development in thinking, and individual differences in cognitive skills. An optional laboratory component, EXP 4934C, may be taken concurrently.

EXP 4934C Laboratory Topics in Cognition. F, W, S, SS.
Credits: 2; repeatable to a maximum of 6 credits with change of content. Coreq: EXP 3604, EXP 4254, EXP 4502, or EXP 4604C.
Contemporary laboratory techniques used in the study of learning, memory, thinking, information processing, and perceptual processes. The course is designed for those planning to pursue graduate studies in psychology and is an optional laboratory component of EXP 3604C, 4502C, 4504C, 4254, and 4635.

GRADUATE COURSES

EXP 5116 Vision. S.
Credits: 4; Prereq: PSB 3004 or PCB 5745 or equivalent, with consent of instructor.

EXP 6098 Literature in Cognition and Perception.
Credits: 4

EXP 6108 A Survey of Sensory Systems.
Credits: 4

EXP 6109 Seminar in Sensory Processes.
Credits: 1††

EXP 6119 Seminar on Vision.
Credits: 4

EXP 6126C Psychoacoustics I.
Credits: 5

EXP 6128 Psychophysiology of Hearing.
Credits: 5

EXP 6209 Seminar: Perception.
Credits: 4

EXP 6519 Seminar: Verbal Learning & Verbal Behavior. F.
Credits: 2 to 5

EXP 6527C Retention and Forgetting.
Credits: 4

EXP 6609 Seminar: Cognition. S.
Credits: 2 to 5; Maximum of 15 credits.

EXP 6717C Psychophysics.
Credits: 4

EXP 6939 Seminar: Current Issues in Cognition and Perception.
Credits: 2 to 15; repeatable to a maximum of 15 credits with change of content

EXP 7127C Psychoacoustics II.
Credits: 5

EXP 7129 Seminar in Audition.
Credits: 3

EXP 7689 Research Methods of Cognition and Perception. F, W, S, SS.
Credits: 2; repeatable with change of content.

Psychobiology

PSB 3004 Introduction to Physiological Psychology. F, S.
Credits: 4; Prereq: PSY 2013.
An introductory survey of the concepts, data, and methods of physiological psychology.

PSB 4003 Advanced Physiological Psychology. S.
Credits: 4; Prereq: PSB 3004. Coreq: PSB 4104L.
Biological bases of behavior and structural and functional correlates of learning, motivation, and emotion.

PSB 4104L Laboratory in Physiological Psychology.
Credits: 1 to 4; Prereq: PSB 3004. Coreq: PSB 4003.
An introduction to current techniques used in research in physiological psychology.

PSB 4934 Biofeedback. F.
Credits: 4; Prereq: PSY 2013 and either PSB 3004 or consent of instructor.
The course surveys research on the organism's ability to control its own physiological activity such as brain electrical activity, heart rate, and blood pressure. Emphasis is on research with humans that has both theoretical and applied relevance. However, the course is not intended to provide instruction on application of biofeedback techniques in the applied setting.

GRADUATE COURSES

PSB 5065 Biology of Human Behavior. W.
Credits: 4; Prereq: PSB 3004 or 6076.

PSB 5115C Advanced Laboratory Topics in Physiological Psychology. W.
Credits: 4; Prereq: PSB 3004 or 6076.

PSB 5325 Human Physiological Psychology: Psychophysiology. W.
Credits: 4; Prereq: PSB 3004 or 6076.

PSB 5445 Drug Use and Abuse. W, S.
Credits: 4; Prereq: 10 hours of psychology.

PSB 5465 Neurohumors and Behavior. S.
Credits: 4; Prereq: PSB 3004.

PSB 5505 Developmental Psychobiology. F.
Credits: 4; Prereq: PSB 3004

PSB 5935 Seminar in Physiological Psychology.
Credits 3 to 5; Prereq PSB 3004

PSB 6067 Human Brain Function.
Credits: 4, Prereq: PSB 6076.

PSB 6076 Literature in Physiological and Comparative Psychology.
Credits. 4

PSB 6086 Advanced Physchophysiology. W.
Credits: 4, Prereq: PSB 5325

PSB 6087 Advanced Physiological Psychology.
Credits: 4; May be repeated with change of content up to a maximum of 8 credits.

PSB 6607 Research Methods in the Sensory Systems.
Credits: 4, May be repeated up to 8 credits for participation in extended experimental studies and/or learning of technical skills of specific sensory specialty.

PSB 6609 Seminar: Current Topics in Sensory Processes. W, SS.
Credits: 1 to 5

PSB 6627 Cochlear Biophysics.
Credits: 5

PSB 7069 Advanced Seminar in Higher Brain Function.
Credits: 4

PSB 7079 Seminar in Psychophysiology. F.
Credits: 1 to 4

PSB 7118 Current Research Methods in Physiological Psychology. W, S.
Credits: 4

PSB 7248 Neurobehavioral Relations. F, S.
Credits: 4

PSB 7249 Seminar in Neural Mechanisms and Behavior.
Credits. 4

PSB 7719 Seminar: Neural Mechanisms of Ingestion Energy Regulation.
Credits. 2 to 4

PSB 7817 Information Storage: A Neurobiological Approach. W, S.
Credits: 4

Psychology

PSY 2013 General Psychology. F, W, S, SS.
Credits: 4
Introductory course designed to provide an understanding of human behavior through an intensive consideration of Psychological Measurement, Perception, Learning, Memory, Motivation, Emotion, Psychological Testing, Personality, and professions and specialized areas in Psychology. In order to provide greater depth to the course, all students are required to participate in research projects (or in *prescribed* alternative equivalent experience).

PSY 3912 Introduction to Research in Psychology. F, W, S, SS.
Credits: 1 to 4††; maximum of 6. Prereq: PSY 2013; Consent of Instructor.
An introduction to current techniques used in research in the various areas of psychology by participation in on-going research.

PSY 4049 Advanced General Psychology. F, S.
Credits: 4; Prereq: 18 quarter hours of psychology.
Consideration of the roles and functions of the specializations of Psychology in contemporary society together with the historial sources and methodological techniques associated with these aspects of psychology.

PSY 4315 Essentials of Psychological Testing. F.
Credits: 5; Prereq. PPE 3004
A coverage of all types of psychological tests and their usage in clinical, counseling, business, educational, governmental, military, and industrial applications. Attention will be paid to test construction and the use of tests in psychological research.

PSY 4905 Individual Work. F, W, S, SS.
Credits 1 to 4, maximum of 6 credits. Prereq At least 18 quarter hours of psychology
Qualified students and the instructor or supervisor concerned may choose a particular problem for investigation or study from the various areas of psychology. A formal written report of the work is required of the student.

PSY 4970 Senior Thesis. F, W, S, SS.
Credits: 1 to 4††; maximum of 8. Combined credits for PSY 3912, PSY 4913 and PSY 4970 shall not exceed 12 credits to count toward the major. Prereq: 36 hours in Psychology and consent of instructor.
Qualified students write a formal research proposal in order to enroll in the course; carry out individual research under the supervision of a faculty member and submit a formal written report.

GRADUATE COURSES

PSY 5605 History of Psychology. F, W, S.
Credits: 5

PSY 6268 Advanced Topics in Factor Analysis.
Credits: 4, Prereq: STA 6707.

PSY 6328 Test Construction.
Credits: 4

PSY 6508 Quantitative Modeling in Psychology.
Credits: 4

PSY 6698 Contemporary Systems in Psychology.
Credits: 4

PSY 6905 Individual Work.
Credits: 1 to 5

PSY 6910 Supervised Research.
Credits: 1 to 5††

PSY 6939 Seminar: The Teaching of Psychology. F, W, S, SS.
Credits: 1 to 5

PSY 6940 Supervised Teaching.
Credits: 1 to 5††

PSY 6971 Master's Research.
Credits: 1 to 15††

PSY 7980 Doctoral Research. F, W, S, SS.
Credits: 1 to 15††

Psychology for Counseling

PCO 3714 Personal Growth. F, W, S, SS.
Credits: 4
An introduction to the concepts and techniques in psychology which apply to personal growth and development. In order to provide greater depth to the course, all students are required to participate in research projects (or prescribed alternative equivalent experiences).

††Grading is on a S-U basis only.

GRADUATE COURSES

PCO 6216 Personal Counseling.
Credits: 4

PCO 6316C Evaluation in Intelligence.
Credits: 4

PCO 6317C Evaluation in Personality.
Credits: 4

PCO 6717 Sexual Identity in the Counseling Process.
Credits: 4

PCO 6939 Seminar: Current Topics in Counseling Psychology.
Credits: 1 to 5

PCO 7948 Practicum in Counseling Psychology. F, W, S, SS.
Credits: 5

PCO 7949 Internship in Counseling Psychology. F, W, S, SS.
Credits: 5; Maximum of 20 credits.

Psychology of Personality

PPE 3004 Psychology of Personality. F, W, S, SS.
Credits: 4; Prereq: PSY 2031.
Development and organization of personality, description and assessment methods, result of research in dynamics.

PPE 4055 Current Theories and Research in Personality. F, W, S, SS.
Credits: 4; Prereq: Consent of instructor.
Issues and problems in description, development and organization of personality.

PPE 4104 Introduction to Humanistic Psychology. F, W, S, SS.
Credits: 4; Prereq. PSY 2013.
The contemporary humanistic view of human behavior and experience. Emphasis upon the human potentialities for high level functioning including creativity, self-concept, caring and commitment.

PPE 4204 The Self. W, SS.
Credits: 5; Prereq: DEP 4115 or PPE 3004.
Origins, developmental organization and change of self in social interaction: methods of study, theory and research.

PPE 4324C Approach and Method for Studying Persons. W.
Credits: 5; Prereq: PSY 2013 and consent of instructor.
Emphasis on problems of approach and design. Laboratory training in basic experimental techniques and procedures related to an analysis of human experience.

PPE 4445 Personality and Somatic Psychology. F.
Credits: 4; Prereq: PPE 3004 and STA 3024.
A study of various psychophysiological relationships. Emphasis on psychological modulation of physiological responses. Relevant topics are psychological set, hypnosis, biofeedback and some of the techniques of somatic psychology.

PPE 4605 Studies of the Person. F, W, S, SS.
Credits: 5; Maximum of 15 credits; Prereq: consent of instructor.
Seminar designed to examine various topics of current interest in the field of personality development and dynamics. May be repeated with change of content up to a maximum of 15 credits.

PPE 4606 Group and Individual Differences. W.
Credits: 5; Prereq: PCO 3714 or PPE 4104.
Intensive study of individual and group differences essential to evaluation of test results and vocational/educational adjustment. Influences of differences in intelligence, age, sex and ethnic and culture background on behavior.

GRADUATE COURSES

PPE 6059 Seminar in Personality.
Credits: 4, Prereq: PPE 6098 or equivalent.

PPE 6098 Literature in Personality.
Credits: 4

PPE 6209 Seminar on the Self. F, S.
Credits: 4

PPE 6307 Research Methods In Personality and Counseling 1. W.
Credits: 4, Prereq: PPE 6098 or consent of instructor.

PPE 6308 Research Methods In Personality and Counseling 2. S.
Credits: 4; Prereq: PPE 6098 or consent of instructor.

PPE 6667 Psychology of Women.
Credits: 4

PPE 7288 Advanced Theories in Personality. W.
Credits: 4

PPE 7309 Advanced Research Seminar in Personality. F.
Credits: 1 to 5

PPE 7947 Field Work in Personality Research. W.
Credits: 4

Social Psychology

SOP 3004 Social Psychology. F, W, S, SS.
Credits: 4; Prereq: PSY 2013.
A study of the social factors influencing individual behavior. Consideration of socialization, social influence and conformity, social interaction, decision-making, attitudes and opinions, and related topics.

SOP 3742 Psychology of Women. F, S.
Credits: 3; Prereq: PSY 2013.
A survey of the research and theory relating to the psychology of women. Course content includes personality, social, and developmental variables.

SOP 4214C Experimental Social Psychology. F, W, S, SS.
Credits: 4; Prereq: SOP 4524.
Laboratory training and basic experimental techniques and procedures used in the investigation of social-psychological processes.

SOP 4334 Community Social Psychology Research. F, W.
Credits: 4; Prereq: SOP 3004.
Community research projects in such areas as studies of urban planning, community conflict, criminal justice, community perception, race relations, the Ombudsman, the meaning of work, citizen participation, quality of life, and social intervention. May be repeated up to a maximum of 8 credits.

SOP 4404 Attitudes and Attitude Change. W, S.
Credits: 4; Prereq: SOP 3004.
The social psychology of attitudes and values, concentrating on how attitudes are defined, measured, formed, and changed. Major emphasis is placed on social psychological theories and research bearing on attitude information and change.

SOP 4513 Human Conflict and Accord. F, S, SS.
Credits: 3; Prereq: PSY 2013.
Theory, research, and applications of interpersonal and intergroup conflict control. A field observation by small study groups is required.

SOP 4524 The Psychology of Small group Behavior. F, W, S, SS.
Credits: 4; Prereq: SOP 3004
A consideration of the behavior of individuals as influenced by other individuals and by the relations among individuals.

SOP 4704 Contemporary Issues in Social Psychology. F, W, S, SS.
Credits: 4; Prereq: SOP 3004 or SOP 4524.
A review and discussion of recent issues and advances in social psychology. Contemporary concerns with regard to both theory and research in the laboratory and the community will be the focus of this advanced offering. Example topics to be covered are: moral and value development, altruism, risky shift, prejudice, modeling, deviance and social change.

GRADUATE COURSES

SOP 6069 Advanced Social Psychology I.
Credits: 4

SOP 6079 Advanced Social Psychology II.
Credits: 4

SOP 6099 Literature in Social Psychology.
Credits: 4

SOP 6116 Theories in Social Psychology. W, S.
Credits: 4

SOP 6229C Laboratory in Social Psychology I.
Credits: 4

SOP 6239C Laboratory in Social Psychology II.
Credits: 4

SOP 6709 Seminar: Social Psychology.
Credits: 4

SOP 7317 Research Methods in Social Psychology.
Credits: 4

SOP 7318 Multidimensional Scaling for Market and Societal Analysis. W.
Credits: 5

SOP 7319 Seminar: Research in Social Psychology. F, W, S, SS.
Credits: 1 to 5

SOP 7339 Social Psychological Research in the Community.
Credits: 4

PUBLIC RELATIONS
College of Journalism and Communications

INSTRUCTIONAL STAFF 1977-78

Terhune, J.L., Chairman; Adams, W.W.; Anderson, J.W.; Butler, G.A.; Detweiler, J.S.; Hammond, F.A.; Kendall, R.L.; Rathbun, F.F.; Wellborn, C.G.

The Public Relations program is designed primarily for those planning professional careers in corporate, business, private, and government fields, as well as in agency work. These courses may be taken for elective credit by students in all Upper Division units of the University. Students who are interested in major work in other communications fields are also referred to course offerings under Advertising, Broadcasting and Journalism.

PUR 3101 Editing and Graphics. F, W, S, SS.
Credits: 4; Prereq: JOU 3100
Fundamental instruction and practice in essentials of editing, with special emphasis on publications in support of corporate public relations programs. Included are typography, copyreading, headline writing, design and basic production techniques for tabloid format publications.

PUR 4000 Public Relations. F, W, S, SS.
Credits: 4; Prereq: MMC 2100 or permission of instructor.
The relationship between journalism media and the public, and the principles, methods and means of influencing the public. Public Relations programs will be discussed.

PUR 4001 Advanced Public Relations. F, W, S, SS.
Credits: 4; Prereq: Senior standing and PUR 4000.
Analysis of modern techniques of disseminating industrial, business, educational and associational news to the appropriate publics. Special publications, broadcasts, special events, planning and budgeting. Emphasis on current professional practice and public relations campaigns.

PUR 4103 Business and Technical Communication. F, W, S, SS.
Credits: 5; Prereq: PUR 3101 or JOU 4200, or permission of instructor.
Writing, editing and production of material in the areas of trade, business, industrial and technical press, with special attention given to style, form and production techniques of magazine format publications.

PUR 4402 Public Relations in Criminal Justice. W.
Credits: 3; Prereq: PR or CJ background or permission of the instructor.
Public relations activities in the field of criminal justice, including public attitudes, public awareness campaigns, community relations, volunteer coordination, and working with the news media.

PUR 4930 Individual Problems in Public Relations. F, W, S, SS.
Credits: 1 to 5; Prereq: At least 15 hours of professional courses and approval of the Dean.
Students and the instructor concerned will choose a problem or project which will give the student actual experience in his major field.

PUR 4931 Individual Problems in Public Relations (Honors). F, W, S.
Credits: 1 to 5; Prereq: At least 15 hours of professional courses in the Upper Division, good standing in the Honors Program, approval of the Honors Committee and the approval of the Dean.
The student and the instructor concerned will choose a problem or project which is consonant with the objectives of the Honors Program.

PUR 4932 Special Study in Public Relations. F, W, S.
Credits: 1 to 5; Prereq: Open only to Seniors and with permission of instructor.
Variable content, providing opportunity for advanced study in the principles, processes and effects of Public Relations. (May be repeated once for a total of 6 quarter hours.)

PUR 4933 Seminar; Ethics and Problems in Public Relations. F, W, S, SS.
Credits: 4; Prereq: Open only to Seniors in the public relations sequence near graduation, or on approval of their instructor.
Analysis and investigations of trends, principles, policies, and ethics, of the most effective and enlightened current public relations practice.

PUR 4949 Co-op Work Experience. F, W, S, SS.
Credits: 1 to 5††; Prereq: At least 15 hours of professional courses must have been completed. Must have academic adviser, department and Dean's approval to receive credit.
Students and instructor concerned will select an appropriate work area related to the field of public relations or an appropriate communications area where the student may gain work experience and/or on-the-job training. (May be repeated for a total of 10 hours. Content must be changed.)

GRADUATE COURSES

Students interested in graduate work in public relations are referred to course offerings under Communication.

REAL ESTATE AND URBAN ANALYSIS
College of Business Administration

INSTRUCTIONAL STAFF 1977-78

Archer, W.R.; Curtis, C.C.; Gaitanis, L.A.; Kelting, R.H.; Smith, H.C.

Courses numbered 3000 or higher are open only to students with Junior standing or above. Note, however, the specific prerequisites for certain courses. Housing and Home Ownership, REE 3720; 4 credits, is offered by correspondence only.

REE 3043 Real Estate Analysis. F, W, S, SS.
Credits: 5
Principles of real estate decision making within the context of our economic, social, legal, and political-governmental systems.

REE 4100 Real Estate Valuation. F, W.
Credits: 4; Prereq: REE 3043.
Approaches and methods of property valuation. Comparable sales analysis, cost-depreciation analysis, and income capitalization are emphasized. A professional appraisal report is required.

REE 4204 Real Estate Financial Analysis. S, SS.
Credits: 4; Prereq: REE 3043.
Real estate financial analysis as applied to various types of property. Includes the underwriting process, sources of funds, portfolio problems, and governmental programs. Money and mortgage market analysis and the use of modern creative finance are emphasized.

REE 4310 Real Estate Investment. W, S.
Credits: 4; Prereq: REE 4100.
Analysis of real estate investments, using modern tools such as the computer. Current issues as well as analytical methods are presented. Includes financing and income tax considerations.

REE 4430 Real Estate Law. W, SS.
Credits: 4; Prereq: REE 3043 or consent of the instructor.
Legal aspects of real property ownership, development, transfer, and brokerage.

REE 4704 Urban Land Use Analysis. F, S.
Credits: 4; Prereq: REE 3043.
Basic operations of the real estate market in land allocation, as well as theories of city growth and structure. The basic economic principles developed are applied to land use decision making in the private and governmental sectors.

REE 4905 Independent Research. F, W, S, SS.
Credits: 1 to 5; Prereq: Senior standing and previous work in the area selected for research.
Admission is by consent of instructor with approval of the Department Chairman. A written report or reports will be required.

REE 4934 Special Topics. F, W, S, SS.
Credits: 1 to 5; Prereq: Permission of department.
Course providing an opportunity for study in depth of topics not offered in other courses and of topics of special current significance. May be repeated with change of content up to a maximum of 10 credits.

GRADUATE COURSES

REE 6286 Seminar in Real Estate Financial Analysis.
Credits: 4

REE 6305 Seminar in Real Estate Valuation.
Credits: 4

REE 6395 Seminar in Real Estate Investment and Development.
Credits: 4

REE 6609 Seminar in Land Use Controls.
Credits: 4

REE 6756 Seminar in Land Use Analysis.
Credits: 4

REE 6905 Individual Work in Real Estate.
Credits: 1 to 5.

REE 6910 Supervised Research.
Credits: 1 to 5††

REE 6936 Seminar in Housing Analysis.
Credits: 4

REE 6940 Supervised Teaching.
Credits: 1 to 5††

REE 6971 Master's Research.
Credits: 1 to 15††

REE 7920 Real Estate Research Workshop.
Credits: 4

REE 7980 Doctoral Research.
Credits: 1 to 15††

REHABILITATION COUNSELING
College of Health Related Professions

INSTRUCTIONAL STAFF 1977-78

Muthard, J.E., Chairman; Garcia, A.; Joiner, J.G.; Saxon, J.P.

Guidance & Counseling

GRADUATE COURSES

EGC 5065 An Introduction to Rehabilitation Counseling. F, S.
Credits: 5

EGC 5166 Psychological and Sociological Aspects of Rehabilitation. F, S.
Credits: 5

EGC 6374 Occupational Analysis and Placement Aspects of Rehabilitation Counseling. F, S.
Credits: 5

EGC 6376 Medical and Related Aspects of Rehabilitation Counseling. W.
Credits: 5

EGC 6493 Rehabilitation Evaluation and Counseling with the Disabled. W, SS.
Credits: 5

EGC 6675 Supervisory Techniques in Rehabilitation Counseling.
Credits: 4

EGC 6767 Research in Vocational Rehabilitation. W, SS.
Credits: 4

EGC 6850 Rehabilitation Client Services Practicum. F, W, S, SS.
Credits: 1 to 4

EGC 6851 Rehabilitation Counseling Practicum. F, W, S, SS.
Credits: 1 to 6

EGC 6885 Internship in Rehabilitation Counseling.
Credits: 10††

EGC 6905 Individual Work. F, W, S, SS.
Credits: 3 to 6

EGC 6910 Supervised Research. F, W, S, SS.
Credits: 1 to 5††

EGC 6934 Seminar in Rehabilitation Counseling with the Disabled Disadvantaged.
Credits: 5

EGC 6940 Supervised Teaching. F, W, S, SS.
Credits: 1 to 5††

††Grading is on a S-U basis only.

RELIGION
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Creel, A.B., Chairman; Carnell, C.S.; Gannon, M.V.; Hiers, R.H.; Hill, S.S.; Isenberg, S.R.; Mesch, B.; Owen, D.E.; Scott, R.T.; Scudder, D.L.; Stahmer, H.M.; Thursby, G.R.

Students electing courses in Religion are encouraged to note the following areas of interest in the Department, and the suggested beginning-level courses in each:

The Meaning and Nature of Religion, REL 2010
Eastern Religion, REL 3340, REL 3330
Biblical Studies, REL 3202, REL 3210, REL 3244, REL 3245
Jewish Studies, REL 3600
Religious Thought, REL 3495, REL 3494, REL 3440, REL 3420
History of Western Religion, REL 3321, REL 3611
Religion in America, REL 3322
Religious Ethics, REL 3172, REL 3140

Students majoring in Religion are required to take a minimum of 10 courses, constituting at least 40 hours, in Religion or approved cognate areas. The major's program must include:

a. One course in each of three of the Western fields of *Biblical Studies*, *History of Western Religion*, *Religious Thought*, and *Study of Religious Behavior*.

Biblical Studies courses are: REL 3202, REL 3210, REL 3244, REL 3245, REL 4294, REL 4291.

History of Western Religion courses are: REL 3321, REL 3600, REL 3611, REL 3612, REL 3500, REL 3121, REL 3122, REL 4134, REL 4143, REL 4120.

Religious Thought courses are: REL 3600, REL 3630, REL 3494, REL 3495, REL 3440, REL 3420, REL 3116, REL 3172, REL 3492, REL 3158, PHI 3700, REL 3620, REL 3695, REL 4460, REL 4407, REL 4462, REL 4112, REL 4120, REL 4177, REL 4156, REL 4690.

Study of Religious Behavior courses are: REL 3322, REL 3600, ANT 3241, REL 3140, REL 3130, REL 3158, SOC 4211, REL 4134, REL 4143, REL 4144, REL 4156.

Other courses: REL 2010, REL 4304, REL 4933 will be classified as Eastern or Western, depending on their content in any given offering of the course.

b. Two courses in the field of *Eastern Religion*.

Eastern Religion courses are: REL 3340, REL 3330, REL 3341, REL 3331, REL 4390, REL 3342, REL 4347, REL 4333, REL 4346.

c. A concentration composed of at least three additional courses in one field.

The student is invited to formulate his own major program, in cooperation with and subject to approval by the departmental coordinator. The coordinator will direct the student to the faculty member(s) best suited to guiding each person's own interest. It is recommended that all majors take REL 4933 in the Senior year. Religion courses taken in another institution may count toward major credit, subject to approval by a departmental adviser.

Certification requirements for secondary school teaching in Religion may be met through a major in English and a minor in Religion. See the announcement in the College of Education section of this catalog, or consult the Department.

Graduate minors should be worked out with the respective department advisers.

Candidates for honors in Religion need to fulfill two requirements in addition to those required for all majors. (1) at least a 3.2 grade point average. (2) Completion of REL 4933 with a grade of B or better.

Attention is called to the fact that five courses in the Religion curriculum are offered in association with other departments: ANT 3241, Anthropology of Religion; PHI 3700, Philosophy of Religion; REL 3620, Philosophies of Judaism; RN 3116, Myth in Film and Literature; and SOC 4211, Sociology of Religion.

Anthropology

ANT 3241 Anthropology of Religion. S.
Credits: 5
Cross cultural survey of beliefs and practices dealing with the supernatural. Magic and Religion. Conceptualization of the supernatural. Sacred specialists, their functions and social position. Theories of comparative religion in the light of primitive data.

Philosophy

PHI 3700 Philosophy of Religion. W.
Credits: 4
A philosophical examination of religious thought and experience.

Religion

REL 2010 Introduction to the Study of Religion. F.
Credits: 4
The ethical, mystical, doctrinal, ritual, and other basic dimensions of the religious life of man, and how to understand them and their relation in specific cases in Asia, Europe, and America.

REL 3116 Myth in Film and Literature.
Credits: 4; Prereq: two courses in humanities.
An exploration of films and selected short works of literature which reflect narratives and images basic in Western consciousness.

REL 3121 The Religious Element in the American Tradition, 1565-1860. F.
Credits: 4
A presentation of the historical development of major religious groups in the United States from the colonial period to the Civil War.

REL 3122 The Religious Element in the American Tradition, 1860 to Date. S.
Credits: 4
The history of major theological and institutional changes among Protestants, Catholics, Jews from the Civil War to date.

REL 3130 Religion in Contemporary American Culture. F.
Credits: 4
Major religious movements and trends in the United States today, as seen through beliefs, practices, memberships, and relation to the life of the national culture.

REL 3140 Religion and Society. W.
Credits: 5
The interaction of religion and social institutions, concerning the ways religious groups influence and are influenced by the sociocultural environment.

REL 3158 Psychological Dimensions of Religious Experience. F, S.
Credits: 4
Use of selected readings and clinical data for examination of crisis, conflict, and the sense of transcendence in man's search for meaning.

REL 3172 Religion and Ethics. F, S.
Credits: 4
Belief and value systems and their implications for understanding current ethical problems.

REL 3202 Survey of Biblical History and Religion. F.
Credits: 4
Major events in the Biblical period, and basic themes in the Biblical faith.

REL 3210 Hebrew Scriptures.
Credits: 5
The history, literature and beliefs of the Israelites as reflected in the Biblical text, in the light of modern scholarship.

REL 3244 New Testament 1. F, W, SS.
Credits: 3
The Historical Jesus based on the first three Gospels.

REL 3245 New Testament 2. W.
Credits: 3
The life and thought of Paul together with the later writings of the Christian community.

REL 3321 Religions of the West. F, W, S.
Credits: 4
Judaism and Christianity.

REL 3322 Patterns of American Religion. F, S.
Credits: 4
A look at the major groupings of religion in the United States, how they differ, what they have in common, the various dimensions of each in their interaction, and their roles in the society of the American people.

REL 3330 Religions of East Asia. F, S, W, SS.
Credits: 4
Buddhism and Chinese-Japanese Religious Thought.

REL 3331 East Asian Scriptures.
Credits: 4
A close study of one or more of the major textual sources for religious life in China and Japan. For example, the *Tao Teh Ching*, the *Analects of Confucius*, or the *Diamond* and the *Heart Sutra*. Previous study of East Asian religion or civilization is recommended. May be repeated with change of content up to a maximum of 8 credits.

REL 3340 Religions of South Asia. F, S.
Credits: 4
Religious traditions of the Indian subcontinent.

REL 3341 South Asian Scriptures.
Credits: 4
A close study of one or more of the major textual sources for religious life in India and South Asia. For example, the classical *Upanishads* or the *Bhagavad Gita*. Previous study of South Asian religion or civilization is recommended. May be repeated with change of content up to a maximum of 8 credits.

REL 3342 Philosophies of India. F.
Credits: 4
Aspects of representative systems of thought, with attention to their relation to Indian religious traditions and with an examination of their claims and forms of argument.

REL 3420 Contemporary Religious Thought. F, W, SS.
Credits: 4
An attempt to discover what contemporary thinkers are saying about religion and the problems of modern life.

REL 3440 Religion and the Modern Mind. S.
Credits: 4
An examination of the modern outlook, focusing upon conceptual commitments associated with present cultural styles, with attention to certain critical issues for religion.

REL 3492 Religion and Communism. F, W, S.
Credits: 3
An analysis of the character and challenge of Communism to the religions of the world. An exploration of the ideological conflict between dialectical materialism and the non-material interpretations of reality.

REL 3494 Images of Man in the Western Tradition: Historical Roots.
Credits: 4
Important literary sources for Western man's self-understanding. Hellenic, Roman, Hebraic and Medieval statements will be investigated.

REL 3495 Images of Man in the Western Tradition: Modern Expressions.
Credits: 4
Important statements of Western self-understanding like those of Descartes, Darwin, and Kafka associated with the contemporary imagination.

REL 3500 History of Christianity. S, SS.
Credits: 4
A survey of history of Christianity from ancient to modern times, with empahsis on pivotal personalities.

REL 3600 Introduction to the Study of Judiasm. F.
Credits: 4
A basic introduction to the history, thought, and literature of the Jewish people.

REL 3611 History of the Jewish People 1: 450 B.C.E. to 1800. F.
Credits: 4
A survey of Jewish history from Ezra and the canonization of the Bible to the Emancipation and Enlightenment.

REL 3612 History of the Jewish People 2: 1800 to Present. W.
Credits: 4
An investigation of the fundamental movements and events in modern Jewish history.

REL 3620 Philosophies of Judaism.
Credits: 4
An investigation of selected figures and themes in the Jewish philosophical tradition both classical and modern. Various approaches both mystical and rational will be considered. May be repeated with change of content up to a maximum of 12 credits.

REL 3630 Jewish Literature. S.
Credits: 4;
A variable content course in aspects of the Jewish literary experience, from the Biblical narrative and Talmudic tales to Yiddish literature and the American Jewish novel.

REAL 3695 Jewish Mysticism, Ancient to Modern.
Credits: 4
Mysticism in Judaism in Biblical, Rabbinic, Medieval and Modern Periods.

REL 4112 Seminar in Theology and Contemporary Literature. W.
Credits: 5; Prereq: REL 3420, or permission of the instructor.
Selected topics in fiction, poetry, and drama studies from the theology-of-culture standpoint; the values and meanings implicit and affirmed in 20th century literature.

REL 4120 Cultural and Intellectual History of American Religion. W.
Credits: 4
Theological, literary, architectural, and artistic contributions of major religious groups to American life, colonial period to date.

REL 4134 Religion in Southern Culture. S.
Credits: 4; Prereq: REL 3321, 3322 or work in southern history.
Development of religious life in the South through its history, with particular reference to its interaction with regional culture.

REL 4143 Modern Western Religious Movements.
Credits: 4; Prereq: REL 3321, 3322 or consent of the instructor.
Interaction among belief, institution, and social role in selected major religious cultures in Europe and the Western Hemisphere.

REL 4144 Special Topics in Religion and Society. F.
Credits: 4; Prereq: REL 3140, or permission of instructor.

REL 4156 Personality Theory and Religious Concepts of Man. W.
Credits: 4; Prereq: consent of the instructor.
Critical study of methods relating the work of such psychologists as Freud and Rogers to religious thinkers like Tillich and Niebuhr with respect to man's experience of limitation, anxiety, and other persons.

REL 4177 Special Topics in Religion and Ethics. W.
Credits: 4
May be repeated with change of content up to a maximum of 12 credits.

REL 4291 Special Studies in New Testament. S.
Credits: 5; Prereq: REL 3244, 3245 or permission of the instructor.
May be repeated with a change of content up to a maximum of 15 credits.

REL 4294 Special Topics in Hebrew Scriptures.
Credits: 5; Prereq: REL 3210 or permission of the instructor.
Advanced study of selected topics in Hebrew Scriptures. May be repeated with change of content up to a maximum of 15 credits.

REL 4304 Seminar in Comparative Religion. S, W.
Credits: 5
Major issues or leading themes which are relevant to the study of more than one religious tradition; e.g., the relation among religions, mysticism, myth and symbol. May be repeated with change of content up to a maximum of 15 credits.

REL 4333 Buddhism Seminar.
Credits: 5; Prereq: REL 3330, 3331 or consent of instructor.
May be repeated with change of content up to a maximum of 15 credits.

REL 4346 Hindu Tradition in the Modern World. S.
Credits: 5; Prereq: REL 3340 or permission of the instructor.
Studies in the reformulation of tradition, e.g., the role of Gandhi, the meaning of *dharma* in the modern world; the response to the impact of secularization, the relation of Hinduism to other religions, etc.

REL 4347 Hinduism Seminar.
Credits: 5; Prereq: REL 3340, 3341 or consent of instructor.
May be repeated with change of content up to a maximum of 15 credits.

REL 4390 Special Topics in Asian Religions. F, W.
Credits: 5; Prereq: permission of the instructor.
May be repeated with change of content up to a maximum of 15 credits.

REL 4407 Medieval Religious Thought.
Credits: 4
An attempt to discover what thinkers in the Middle Ages were saying about religion and the problems of Medieval life.

REL 4460 Special Topics in Religious Thought. W.
Credits: 4
An examination of the problems of man, God, evil, freedom, values and immortality. Attention is given to the relations of common sense, science, philosophy and religion.

REL 4462 Religious Interpretations of History. S.
Credits: 4; Prereq: 12 hours of Upper Division Humanities including History.
Recent views of Northrop, Toynbee, Sorokin, and Niebuhr analyzed in the light of Asiatic and other Western conceptions.

REL 4690 Seminar in Jewish Studies.
Credits: 5
Selected figures and topics in the history of Jewish thought. May be repeated with change of content up to a maximum of 15 credits.

REL 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5; Prereq: 12 hours of religion or consent of department.
Majors or other advanced undergraduates who wish to supplement regular course work by individual studies under guidance. May be repeated with change of content up to a maximum of 15 credits.

REL 4933 Senior Seminar in Religion. W.
Credits: 4; Prereq: Junior or Senior standing and permission of department adviser.
Examination of different approaches to the study of Religion.

Sociology

SOC 4211 Sociology of Religion. W.
Credits: 4
The sociological perspective on religions: ideologies and rituals. Social aspects of the religious and religious aspects of the social. Organized religions and religions "outside the sacred walls."

THE SOCIAL SCIENCES
University College

INSTRUCTIONAL STAFF 1977-78

Doherty, H.J., Chairman; Baringer, W.E.; Bentley, G.R.; Blakey, A.F.; Burns, A.M.; Button, J.W.; Colburn, D.R.; Cox, M.G.; Dupree, H.; Griffis, C.S.; Hammond, E.A.; Hoffman, G.J.; Huber, M.W.; Jacobson, J.E.; Johnson, L.R.; Lamme, A.J.; Lawless, R.; Oliver-Smith, A.R.; Owen, D.E.; Peek, R.L.; Pleasants, J.M.; Pozzetta, G.E.; Proctor, S.; Purdy, B.A.; Scher, R.K.; Shenkman, F. A.; Wilson, H.A.

This department offers the following coursework in satisfaction of the general education requirement in the social sciences. The courses titled American Institutions aim at providing an understanding of trends and movements of the twentieth century world, with special reference to American culture and institutions. By providing a synthesis which cuts across the traditional disciplines of history, anthropology, sociology, economics, law, and political science the department attempts to give students both breadth and depth of knowledge with which they may better approach an understanding of the society in which they live.

The regular American Institutions sequence is composed of three courses offered in a logical, related fashion. All students should take SSI 2110 first. Students may choose any one of the following as the second course:

SSI 2120
SSI 2121
SSI 2122
SSI 2935
SSI 3127

Students may choose any one of the following as the third course:

SSI 2201
SSI 2221
SSI 3227

(ASN 2001 Asia and its Peoples and SPC Patterns of Intercultural Communication are also acceptable as third sequence courses.)

Social Sciences—Interdisciplinary

SSI 2110 American Institutions: Culture and the Socializing Institutions. F, S, SS.
Credits: 3
An introduction to the study of the culture of the United States emphasizing the concepts of culture and institutions and the formative nature of the domestic, educational, and religious institutions.

Descriptions

SOCIOLOGY

ECONOMIC AND POLITICAL INSTITUTIONS

SSI 2120, 2121, 2122, 3127.
Upon completion of SSI 2110, students may elect one of the following courses which develop different approaches to the study of the economic and political aspects of American culture. Students should not elect more than one of these courses.

SSI 2120 American Institutions; the Emergence of the Economic and Political Institutions. F, W, SS.
Credits: 3
The historical development of the economic and political institutions of the United States with emphasis upon their roles in modern society.

SSI 2121 American Institutions; Economic and Political Institutions from Minority and Ethnic Group Perspectives. W.
Credits. 3
The development of the economic and political institutions of the United States with special reference to the contributions and problems of national and ethnic groups in nineteenth and twentieth century America.

SSI 2122 American Institutions; The Economic and Political Institutions of Urban America. W.
Credits: 3
The development of the economic and political institutions of the United States with special emphasis upon the emergence of problems peculiar to the urbanized America of the twentieth century.

AMERICAN INSTITUTIONS IN WORLD PERSPECTIVE

SSI 2201, 2221; ASN 2001; SPC 3710; SSI 3227.
Upon completion of two quarters of American Institutions students may elect one of the following courses which relate the United States to the world scene. Students should not elect more than one of these courses.

SSI 2201 American Institutions in World Perspective. S,
Credits: 3
A cross-cultural analysis of the major institutions of the United States and those of selected significant regions of the modern world.

SSI 2221 American Institutions; America's Role in World Affairs. F, W, S, SS.
Credits: 3
The impact of the United States upon the world since the Second World War with special reference to international relations and comparative economic and political systems.

(Note: ASN 2001 Asia and its Peoples and SPC 3710 Patterns of Intercultural Communication are also acceptable as third quarter courses.)

SPECIAL TOPICS COURSES

Upon completion of SSI 2110, students may take SSI 3127; after completion of SSI 2110 and any second term SSI course, students may take SSI 3227.

SSI 3127 American Institutions; Special Topics. W.
Credits: 4
Interdisciplinary study of topics related to the economic and political institutions of the United States. Designed for advanced students. Topics announced annually as offered.

SSI 3227 American Institutions: Special Topics. S.
Credits: 4
Interdisciplinary study of topics related to the role of the United States in world affairs or in the perspective of other cultures. Designed for advanced students. Topics announced annually as offered.

SEMINAR STUDY

Seminar courses may be taken whenever offered, with the permission of the instructor.

SSI 2935 Seminar in American Institutions. F, W, S.
Credits: 3
Directed investigations into broad topics encountered in the study of the institutions of American culture, utilizing the methodology of the social sciences for an interdisciplinary approach to topics. May be repeated with change of content up to a maximum of 9 credits.

HONORS COURSES

SSI 2114-2124-2224 American Institutions; College Honors. 2114-F, 2124-W, 2224-S.
Credits: 3 each
An interdisciplinary study of American Institutions specially structured to the abilities of qualified students. Admission by invitation only.

SPECIAL SERVICES COURSES

SSI 2116, 2126, 2226 American Institutions. 2116-SS, 2126-F, 2226-W.
Credits: 2116-4, 2126-3; 2226-3
Content consistent with the goals of SSI 2110, 2120, 2221, structured to the abilities of qualified students. Admission by invitation only.

SOCIOLOGY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Gorman, B.L., Chairman; Agresti, B.; Beeghley, L; Berardo, F.M.; Bock, E.W.; Crandall, L.A.; Frazier, C.E.; Henderson, G.G.; Henderson, R.D.; Henretta, J.C.; Holtzer, C.E.; Keller, O.J.; LaGreca, A.J.; Leslie, G.R.; McCoy, T.L; O'Rand, A.M.; Rambo, P.B.; Richards, P.; Robbins, C.L.; Schwartz, M.; Streib, G.F.; Terry, W.C.; Thomas, C.O.; Vandiver, J.S.; Vera, H.O.; Warheit, G.J.; Wood, C.H.
heit, G.J.; Wood, C.H.

Sociology majors are required to complete SOC 2000, STA 3013 and two of the following three courses: SOC 4640, SOC 4001 and SOC 4500. All three of these courses are recommended for students who intend to take graduate work in Sociology. Students who are considering Sociology as a major should contact a departmental adviser in Peabody 309 soon after enrollment in the University.

A sociology major requires at least 36 total hours of course work in sociology. At least 26 of these hours must be in courses numbered 3000 or higher.

HONORS IN SOCIOLOGY

Sociology majors may earn departmental honors two ways: (1) by completing (with a grade of B or higher) the 3 course sequence of SOC 4931 (Departmental Honors) and attaining an upper division and a sociology grade-point average of 3.3, or (2) by completing all work in sociology with an average of 3.8 and an overall upper division average of 3.3.

Eligibility for the SOC 4931 sequence is limited to students with 30 hours of upper division credit, at least 16 hours in sociology, and either a 3.0 overall upper division average, a 3.5 sociology average, or faculty recommendation. Interested students must make application to the sociology department. Application materials and information are available from the sociology advisers. Sociology majors attaining a 3.8 in all sociology work taken and a 3.3 in all upper division work are granted departmental honors without taking the SOC 4931 sequence.

Honors sequence work may consist of seminars, colloquia, group and individual research, and individual work on elected topics in sociology. Seminars and colloquia involve full student participation in the exploration of important themes in sociology of interest to the students in the program.

Demography and Human Ecology

DHE 4101 Population. S.
Credits: 4, Prereq: SOC 2000.
Characteristics and trends in the population of the contemporary world. Historical and current growth patterns related to resource conservation, food production, and modernization in various regions of the world.

DHE 4200 Population Policy. W.
Credits: 4
Review of past and current U.S. population policies. Formulation of policy in the light of numerous criteria and goals. Direct and indirect consequences of selected policies, their implementation and evaluation.

GRADUATE COURSES

DHE 6110 Seminar in Population.
Credits: 4

DHE 6111 Seminar in Latin American Population.
Credits: 4

DHE 6205 Population Policy.
Credits: 4

DHE 6453 Seminar in Demographic Processes and Methods.
Credits: 4

Marriage and Family

MAF 2200 Marriage and the Family. F, W, S, SS.
Credits: 4
Development of masculine and feminine roles. Recent changes in premarital interaction: dating, sexual involvement, coed dorm living, living together. Marital adjustment and parenthood. Alternative life styles, including group marriage, communal living, and open marriage.

MAF 4400 The Sociology of Human Sexuality. S.
Credits: 4; Prereq: SOC 2000.
Social sources and social consequences of ideas concerning human sexuality as they emerge from sociological study of Western and non-Western thought.

MAF 4501 The American Family. F, S, SS.
Credits: 4; Prereq: SOC 2000.
The impact of rapid social changes upon families; racial, class, and ethnic variations. The liberation of women and changing family roles. Alternative life styles and the future of the family.

MAF 4510 Comparative Family Systems. W.
Credits: 4; Prereq: SOC 2000.
An intercultural and historical analysis of the family. Emphasizes development of the Western family. U.S. kinship system within the historical and intercultural context.

GRADUATE COURSES

MAF 6405 The Sociology of Human Sexuality.
Credits: 4

MAF 6507 The American Family.
Credits: 4

MAF 6515 Comparative Family Systems.
Credits: 4

MAF 6601 Seminar in Family Theories.
Credits: 4

MAF 6611 Seminar in Family Research.
Credits: 4

Social Sciences - Interdisciplinary

SSI 4601 Masterpieces in Social Science 1. F.
Credits: 4; Prereq: Senior standing and a major in one of the social sciences.
For advanced students with background work in the social sciences who have approval of their major adviser and the course chairperson. Reading of classics in economics, history, political science, sociology, and cultural anthropology.

SSI 4602 Masterpieces in Social Sciences 2. W.
Credits: 4
The second part of the masterpieces sequence.

SSI 4603 Masterpieces in Social Sciences 3. S.
Credits: 4
The third part of the masterpieces sequence.

Social Work

SOW 3001 The Field of Social Work.
Credits: 4; Prereq: SOC 2000.
Factors influencing the growth and development of social work. Application of sociological principles to social work activities. Field visits to welfare agencies.

SOW 3033 Methods in Social Work.
Credits: 4; Prereq: SOW 3001.
Methods relating to social case work, social group work, social administration and social research. Supervised field work.

Sociology

SOC 2000 Principles of Sociology. F, W, S, SS.
Credits: 4
Introduction to sociology as a social science, and analysis of American society. Culture, socialization, deviance, bureaucracy, population, urbanization, social stratification, and minorities.

SOC 2020 Social Problems. F, W, S, SS.
Credits: 4
The development, analysis, and treatment of social problems. Crime, poverty, prejudice and discrimination, pollution and environmental despoilation, drug abuse, mental illness, and others. Special attention to factors in U.S. society that cause social problems.

SOC 3022 Poverty. F, S.
Credits: 4; Prereq: SOC 2000.
The social, cultural, economic, political, and psychological implications of being poor. Sources of poverty in the structure and operation of society: consequences of poverty for society. Current and feasible policies for easing the problem. Basically, a survey of the contemporary United States, but with references to the U.S. past and to other nations both developed and undeveloped.

SOC 3300 Community Growth and Change. F.
Credits: 4; Prereq: SOC 2000.
Analysis of community power, community change and alternative community structures. Historical influences and implications for the future.

SOC 3310 Urban Sociology. F, S.
Credits: 4; Prereq: SOC 2000 or consent of department.
The development of cities, and their spatial and social structure. Critical problems and solutions. Integration of people in the social setting. Social implications of city planning.

SOC 3320 Rural Sociology. W.
Credits: 4; Prereq: SOC 2000 or consent of department.
The organization of rural societies and rural institutions. Modernization and social change. Special attention to Third World nations.

SOC 3331 Latin American Societies. F.
Credits: 4; Prereq: SOC 2000.
Latin American culture and social structure. Historic, geographic, economic, social, and population characteristics of Latin American nations. Spanish, Portuguese, English, and American exploitation of Latin America.

SOC 3745 Minorities in American Society. F, S, SS.
Credits: 4; Prereq: SOC 2000.
Sociological analysis of the structure, social processes, and efforts to effect change, of racial, ethnic, and religious minorities.

SOC 3830 Society and the Individual. F, W, S, SS.
Credits: 4; Prereq: SOC 2000.
Relation of the individual to his social environment with special reference to person perception, self formation, self disclosure, attitude formation and change, and group structure and processes. Social forces that shape the lives of individuals, and how individuals adjust to modern society.

SOC 4001 Advanced General Sociology. F, W, S, SS.
Credits: 4; Prereq: 12 hours of sociology.
Intensive study at an advanced level of the general principles of sociology.

SOC 4040 Special Study in Sociology.
Credits: 4; Prereq: 12 hours of sociology.
Pro-seminar study on specialized topics. May be repeated for credit with change of content for a maximum of 12 hours.

SOC 4130 Juvenile Delinquency. W.
Credits: 4; Prereq: SOC 2000.
Theories and research on delinquency. Sociological analysis of the juvenile justice system.

SOC 4150 Criminology. F, S.
Credits: 5; Prereq: SOC 2000.
Nature and causes of crime and criminality. Sociological analysis of criminal law and criminal justice agencies. Effects on the individual of being defined as criminal.

SOC 4211 Sociology of Religion. W.
Credits: 4; Prereq: SOC 2000.
The sociological perspective on religions; their ideologies and rituals. Social aspects of the religious, and religious aspects of the social. Organized religions, and religions "outside the sacred walls."

SOC 4230 Social Factors in Health and Illness. F.
Credits: 4; Prereq: 12 hours of sociology.
Effects of group characteristics in the causation, amelioration, and prevention of mental and physical illness and social influences in medical education, medical practice, and hospital administration.

SOC 4241 Social Gerontology. F.
Credits: 4; Prereq: SOC 2000.
Social and personal conditions of post-retirement years; family and housing patterns, income, leisure, health, group processes, and evaluation of institutional care for the aged.

SOC 4243 Sociology of Death and Survivorship.
Credits: 4
The sociological dimensions of death, bereavement, and widowhood; ritualistic customs and behavior associated with death on both intra- and cross-cultural bases; contemporary issues associated with death-related phenomena; social and environmental factors affecting survivor adaptation.

SOC 4410 Social Inequality. F.
Credits: 4; Prereq: SOC 2000.
The unequal distribution, among individuals and groups of wealth, power, and prestige; the effect of class systems upon society; the effect of class membership on individuals; social mobility.

SOC 4422 Complex Organizations. W.
Credits: 4, Prereq: 12 hours of sociology or equivalent foundation in Educational Administration, Industrial and Systems Engineering, Management, or Political Science.
The behavior of individuals and systems in formal organizations; bureaucratic models; government, hospital, church, school, industry, etc., as manifestations of a common principle.

SOC 4432 Social Movements. S.
Credits: 4; Prereq: SOC 2000.
Sociological, sociopsychological, and natural history analyses of the determinants, processes, and functions and nativistic, reform, protest secessionist, cultic, communal, and revolutionary movements.

SOC 4462 Modernization in Latin America.
Credits: 4; Prereq: SOC 2000.
Definition and measurement of modernization. Cultural, social, and demographic causes and consequences of modernization in Latin America. The dependency model in Latin American development.

SOC 4500 Methods of Social Research. F, W, S, SS.
Credits: 5
Introduction to the scientific method and its application to social science research. Research design, data collection, and selected topics related to data analysis and interpretation. (No statistics).

SOC 4620 Comparative Sociology: Theory and Methods.
Credits: 4, Prereq: Senior standing.
Analysis of regularities and differences among societies. The importance of cross-societal research for building sociological theories.

SOC 4640 Development of Sociological Thought. F, S.
Credits: 4; Prereq: 8 hours of sociology.
Comparative study of the major ideas of the principal contributors to the development of sociology. Emphasizes relevance of these ideas to contemporary social thought and current social issues.

SOC 4720 Black America: Current Problems. W.
Credits: 4; Prereq: SOC 3745.
A survey of social conditions, social institutions, and group leadership among Afro-Americans today.

SOC 4831 Personality and Social Structure. W.
Credits: 4; Prereq: SOC 3830 or equivalent.
The impact of social structure upon the statuses and roles of individual human beings. Personality development, role behavior, adult socialization, self image, and self evaluation; and the effects of assigning persons to different social positions.

SOC 4850 Collective Behavior. W.
Credits: 4; Prereq: SOC 2000.
The dynamics, determinants, and significance of panicking, rioting, grieving, and celebrating crowds and of diffuse forms of fads, fashions, scandals, deviant epidemics and mass behavior. Study of the community dynamics and role of publics and public opinion in contemporary society.

SOC 4905 Individual Work. F, W, S.
Credits: 4; Prereq: 12 hours of sociology and consent of department.
Designed to permit students to work in areas not covered in regularly scheduled courses. May be repeated for credit up to 8 hours with change of content.

SOC 4931 Departmental Honors in Sociology. F, W, S.
Credits: 4; Prereq: By departmental invitation, limited to students with 30 hours of upper division credits, 16 hours of credit in Sociology, and an upper division grade-point average of 3.0 or an

average in Sociology of 3.5.
Seminars, colloquia, and individual work on selected topics. Students may take the course for three quarters, for 12 hours credit.

GRADUATE COURSES

SOC 5905 Individual Work.
Credits: 1 to 5

SOC 5933 Special Study in Sociology.
Credits: 4

SOC 6050 Advanced General Sociology.
Credits: 4

SOC 6115 Deviance.
Credits: 4

SOC 6135 Juvenile Delinquency.
Credits: 4

SOC 6155 Criminology.
Credits: 5

SOC 6175 Research Problems in Deviance.
Credits: 4

SOC 6235 Social Factors in Health and Illness.
Credits: 4

SOC 6236 Comparative Studies in Health Systems.
Credits: 4

SOC 6237 Health Facilities in the Modern Community.
Credits: 4

SOC 6238 Health Professions in the Modern Community.
Credits: 4

SOC 6244 Sociology of Death and Survivorship.
Credits: 4

SOC 6246 Social Gerontology.
Credits: 4

SOC 6247 The Sociology of the Aged.
Credits: 4

SOC 6312 Seminar in Urban Ecology.
Credits: 4

SOC 6314 Seminar in Comparative Urbanization.
Credits: 4

SOC 6315 Seminar in Metropolitan Growth and Development.
Credits: 4

SOC 6321 Seminar: Sociology of Rural Development.
Credits: 4

SOC 6335 Seminar in Brazilian Society.
Credits: 4

SOC 6336 Seminar in Spanish American Societies.
Credits: 4

SOC 6337 Seminar in Contemporary African Societies.
Credits: 4

SOC 6415 Social Inequality.
Credits: 4

SOC 6426 Complex Organizations.
Credits: 4

SOC 6435 Social Movements.
Credits: 4

SOC 6466 Modernization in Latin America.
Credits: 4

††Grading is on a S-U basis only.

SOC 6501 Methods of Social Research.
Credits: 5

SOC 6502 Social Research Methods.
Credits: 4

SOC 6506 Survey Research.
Credits: 5

SOC 6616 Basic Sociological Theories.
Credits: 4

SOC 6625 Comparative Sociology: Theory and Methods.
Credits: 4

SOC 6630 Theory Construction.
Credits: 4

SOC 6646 Development of Sociological Thought.
Credits: 4

SOC 6647 The Development of Sociological Theories.
Credits: 4

SOC 6748 Seminar in American Minority Groups.
Credits: 4

SOC 6808 Seminar in Symbolic Interaction.
Credits: 4

SOC 6827 Ethnomethodology.
Credits: 4

SOC 6832 Personality and Social Structure.
Credits: 4

SOC 6855 Collective Behavior.
Credits: 4

SOC 6905 Individual Work.
Credits: 1 to 5

SOC 6910 Supervised Research.
Credits: 1 to 5††

SOC 6940 Supervised Teaching.
Credits: 1 to 5††

SOC 6971 Master's Research.
Credits: 1 to 15††

SOC 7285 Research in Educational Sociology.
Credits: 5

SOC 7503 Seminar in Methods of Social Research.
Credits: 4

SOC 7657 Seminar in the Sociology of Knowledge.
Credits: 4

SOC 7933 Special Study in Sociology.
Credits: 4

SOC 7935 Advanced Study in Sociology.
Credits: 5

SOC 7980 Doctoral Research.
Credits: 1 to 15††

SOIL SCIENCE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Eno, C.F., Chairman; Blue, W.G.; Breland, H.L.; Berkheiser, V.E.; Caldwell, R.E.; Calhoun, F.G.; Carlisle, V.W.; Davidson, J.M.; Fiskell, J.G.A.; Gammon, N., Jr.; Graetz, D.A.; Hallmark, C.T.; Hammond, L.C.; Herbert, J.H.; Hortenstine, C.C.; Hubbell, D.H.; Mansell, R.S.; Popenoe, H.L.; Pritchett, W.L.; Rhue, R.D.; Robertson, W.K.; Rothwell, D.F.; Sartain, J.B.; Spinks, D.O.; Street, J.J.; Volk, B.G.; Yuan, T.L.

SOS 3003 The Soil—A Dynamic Multiple Resource. W, SS.
Credits: 2
General background course for students interested in primary and secondary education, real estate, landscape architecture, and others who wish to gain an appreciation of soils as a living resource in our environment. Materials presented will be relevant to the use of soils for a wide variety of urban, industrial, agricultural, and recreational purposes. Not available for major credit.

SOS 3007 Tropical Soils and Their Environment. W.
Credits: 4; Prereq: One course in chemistry.
Soils in relation to tropical ecology and land management systems in agricultural development. For students who desire a cultural understanding of tropical agriculture. Not available for major credit.

SOS 3022C General Soils. F, W, S, SS.
Credits: 5; Prereq: CHM 2040.
Fundamentals of soil science emphasizing their physical, chemical, and biological properties in relation to plant growth.

SOS 3215C Agriculture and Environmental Quality. W, SS.
Credits: 4
Analysis of effects of agriculture on environmental quality; emphasis on agricultural wastes and practices; potential for using agricultural systems for disposal of other wastes; effects of pollution on the agricultural environment.

SOS 4115 Fertilizers and Soil Fertility. F, S.
Credits: 4; Prereq: SOS 3022.
Formulation, manufacture, and use of commercial fertilizers with reference to economical aspects, methods of application, and effects on soil reactions.

SOS 4303 Soil Microbiology. F.
Credits: 4; Prereq: SOS 3022 and APB 2170.
Occurrence and activities of soil microorganisms and their influence on soil productivity.

SOS 4404C Soil Chemistry. F, S.
Credits: 4; Prereq: SOS 3022 and CHM 2042.
Fundamental relationships of the soil chemical factors and plant growth. The effect of organic matter, soil colloids, cation exchange, acidity, and liming on plant nutrient availability.

SOS 4602 Soil Physics. W.
Credits: 4; Prereq: SOS 3022.
Physical properties of soils as related to use, emphasizing plant growth.

SOS 4715 Soil Genesis and Classification. W.
Credits: 4; Prereq: SOS 3022 and GLY 2015.
Morphology of soils, pedogenic processes, factors of soil formation, soilscapes and soil bodies, soil taxonomy, and interpretations of soil maps.

SOS 4718 Soils of Florida. F.
Credits: 3; Prereq: SOS 3022 and SOS 4715, or consent of instructor.
Distribution and evaluation of Florida soils for agricultural, residential, industrial, and recreational uses. Basic geological relationships and factors of formation determining profile characteristics. Field trip required.

SOS 4732 Soil Survey. S.
Credits: 3; Prereq: SOS 3022.
Soil surveys, soil maps, and survey reports. Detailed survey and mapping of an assigned area.

SOS 4905 Individual Work. F, W, S, SS.
Credits: 1 to 3; Maximum of 3 credits; Prereq: 8 credits of soils and permission of the instructor.
Selected topics for qualified students.

SOS 4941 Full Time Practical Work Experience in Soil Science. F, W, S, SS.
Credits: 1 to 4; S-U Grade only. Prereq: Prior

arrangement with adviser, approval of Department Chairman and Dean.
Practical work must be a new experience and related to field of study.

GRADUATE COURSES

SOS 5132 Tropical Soils. W.
Credits: 3

SOS 6136 Soil Fertility.
Credits: 4

SOS 6233 Forest Soils.
Credits: 4

SOS 6323 Soil Microbiology.
Credits: 3

SOS 6325L Soil Microbiology Laboratory.
Credits: 3

SOS 6414 Soil Chemistry.
Credits: 5

SOS 6418 Micronutrients in Soils.
Credits: 3

SOS 6424 Laboratory Methods of Soil Chemical Analysis.
Credits: 4

SOS 6444 Soil Organic Matter and Organic Soils.
Credits: 5

SOS 6454 Colloidal and Physical Chemistry of Soils.
Credits: 5

SOS 6464 Soil Mineralogy.
Credits: 5

SOS 6622 Soil Physics.
Credits: 4

SOS 6717 Soil Genesis and Classification.
Credits: 4

SOS 6752 Morphology of Florida Soils.
Credits: 1

SOS 6905 Non-Thesis Research.
Credits: 1 to 6

SOS 6910 Supervised Research.
Credits: 1 to 5††

SOS 6931 Seminar.
Credits: 1

SOS 6932 Topics in Soils.
Credits: 4

SOS 6940 Supervised Teaching.
Credits: 1 to 5††

SOS 6971 Master's Research.
Credits: 1 to 15††

SOS 7980 Doctoral Research.
Credits: 1 to 15††

SPEECH
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Moore, G.P., Acting Chairman; Bock, D.G., Coordinator of Undergraduate Studies; Abbott, T.B.; Bock, E.H.; Brown, D.R.; Brown, W.S., Jr.; Bzoch, K.R.; Chestnut, C.M.; Clark, A.J.; Cutler, W.H.; Dew, D.; Goldstein, L.P.; Hammer, L.C.; Hollien, H.; Jenson, P.J.; Kemker, J.; LaPointe, L.L.; Markel, N.N.; Nattress, M.B.; Paige, A.; Rothman, H.B.; Saine, T.J., III; Schmidt, P.L.; Scholes, R.J.; Scroggie, E.; Sever, J.C.; Teas, D.C.; Tew, R.E.; Waldron, C.M.; Williams, D.E.; Williams, W.N.

SPEECH MAJOR

Students majoring in speech are expected to complete approximately 50 hours of acceptable courses in the department as well as the College requirements for graduation. Majors are advised to work out a planned program with a Speech Department advisor in their major area (speech pathology, audiology, public communication language sciences, phonetic sciences, or behavioral communication). When signed by the department advisor the planned program will constitute the student's contract for graduation.

MAJOR HONORS PROGRAM:

To be eligible for admission into the Departmental Honors program, the student must have a GPA of 3.2 overall and in Speech, and must have completed at least 18 credits in Speech. To graduate with Departmental Honors, the student must have GPA of 3.3 in the major and 3.5 average for a minimum of 4 credits in SPC 4931 "Honors in Speech."

Communication

COM 3310 Research Methods in Behavioral Communication. F, W, S.
Credits: 4
Explores scientific methods of investigation and accompanying issues and concepts necessary to behavioral communication research. Studies those factors which facilitate the development of knowledge in the area.

COM 4110 Seminar in Communication Contexts. W, S.
Credits: 4; Prereq: SPA 2300 and consent of instructor, repeatable up to 12 hours.
Explores the role of speech communication in such contexts as organizations, the family, and clinical situations. May be repeated with change of content.

GRADUATE COURSES

COM 6121 Seminar - Organizational Speech Communication.
Credits: 4

COM 6300 Introduction to Graduate Study.
Credits: 4

COM 6316 Quantitative Research in Speech 1: Applied Methodologies.
Credits: 4

COM 6318 Measurement in Speech Communication.
Credits: 4

COM 6320 Quantitative Research in Speech 2: Laboratory Methodologies.
Credits: 4

COM 6350 Methods of Theory Construction in Speech.
Credits: 4

Linguistics

LIN 2701 Introduction to Psycholinguistics. F, W, S, SS.
Credits: 3; Prereq: SPC 2300.
An introduction to the history, scope, problems and present state of the psychology of language and present state of the psychology of language. Includes survey of theories and methods of the several disciplines concerned with the scientific study of language.

LIN 2711 Phonetic Theory. F, W, S, SS.
Credits. 4, Prereq. SPC 2300
An introduction to the distinctly human processes of speech production and perception, including a broad treatment of the physiology of the systems, the nature of the phonetic code and the acquisition of speech.

LIN 3200 Phonetic Transcription. F, W, S, SS.
Credits 3, Prereq: SPC 2300.
Intensive training in the use of the International Phonetic Alphabet (IPA) for transcribing phonetic elements of General American English.

LIN 3700 Language and the Brain, F, S.
Credits: 3
How sentences are produced, understood, and remembered by the human language user. Linguistic studies of aphasia, mental retardation, and selected communicative skills such as reading will be considered.

LIN 3710 Children's Speech, F, W, SS.
Credits: 3
An introduction to theoretical and practical aspects of speech and language development, beginning at birth, during infancy, and ending in later childhood.

LIN 4231 Advanced Phonetic Transcription. W, SS.
Credits: 3; Prereq: LIN 3200.
Intensive training in the use of the International Phonetic Alphabet (IPA) for transcribing Phonetic elements of regional and cultural dialects in the United States, misarticulations in English, and foreign languages.

LIN 4233 Advanced Phonetics and Phonemics. S.
Credits: 3; Prereq: LIN 3200.
Study of the sounds of spoken English. Detailed examination of dialect differences, the phonemic structure of English, phonemic theory, and the description of non-language sounds. Includes transcription practice.

LIN 4260 Phonetic Theory. F, W, S.
Credits: 4; Prereq: LIN 2711 and 2701.
The physiologic, acoustic, and perceptual study, analysis and evaluation of speech sounds in differing contexts within the English language. Theories of speech production and perception will be linked to phonetic analysis of American English.

LIN 4290 Contemporary Issues in Phonetic Sciences. W, S, SS.
Credits: 4; Prereq: SPA 2711 and 2701.
Designed to explore current topics in Phonetic Sciences, e.g., Speaker Identification, Speech Processes, Models of Speech Production/Perception. Discussions of the selected topic will include: background information, current status, experimental questions, methodologies and future consideration for research.

LIN 4712 Receptive Language Development in Infancy. F, W, S, SS.
Credits: 3
Receptive capacities and processes of infants for language development from the prenatal period through the first two years of life.

LIN 4905 Individual Study. F, W, S, SS.
Credits: 1 to 4, Available by permission of instructor and department chairman.
A project, reading, or research course. May be repeated with change of content up to a maximum of 8 credits.

GRADUATE COURSES

LIN 5231 Advanced Phonetics and Phonemics.
Credits: 5

††Grading is on a S-U basis only.

Descriptions

LIN 5715 Language Acquisition.
Credits: 5

LIN 6705 Psycholinguistics.
Credits: 5

LIN 6705L Psycholinguistics Laboratory.
Credits: 3

LIN 6707 Experimental Linguistics.
Credits: 5

LIN 6716 Child Language.
Credits: 4

LIN 7195 Seminar in Experimental Linguistics.
Credits: 3

LIN 7295 Seminar in Experimental Phonetics.
Credits: 3

LIN 7709 Seminar in Psycholinguistics.
Credits: 3

Speech Communication

SPC 2050 Voice and Articulation. F, S.
Credits: 3
Designed to establish good habits of speech via study of voice and articulation disorders. Includes practice in overcoming speech problems.

SPC 2260 Criticism and Interpretation of Oral Discourse. F, W, S, SS.
Credits: 3
Concerned with aesthetic and critical judgments of speech. Examination of the act of speech in a variety of performance situations. Special emphasis is placed on how one judges the quality of oral interpretation, the voice, and aesthetic dimensions of the speaker/audience relationship.

SPC 2300 Introduction to Speech Communication. F, W, S, SS.
Credits: 5
An introduction to the principles and procedures that promote effective communication. Concerned with the functions that speech communication serves for man. Examination of the various contexts in which communication occurs and constraining factors that affect communication.

SPC 2330 Introduction to Nonverbal Communication. F, W, S, SS.
Credits: 3; Prereq: SPC 2300.
Survey of the various modes of communicating nonverbally, including use of the voice, body and eyes, physical appearance, touch, distancing, time usage and manipulation of the environment. Examination of the role of nonverbal communication in various contexts and in relation to verbal communication. Practical experience in observing and analyzing nonverbal cues.

SPC 3210 Theories of Human Communication. F, W, S, SS.
Credits: 5; Prereq: SPC 2300, and 8 credits in speech.
A thorough examination of theoretical approaches to human communication. Concerned with understanding how theory and research contribute to knowledge in the speech discipline. Intended to provide synthesis of material in speech-major core.

SPC 3250 General Semantics in Spoken Language. F, W, S, SS.
Credits: 4, Prereq: SPC 2300.
Investigation of problems implicit in oral language usage through the study of general theory of symbols.

SPC 3301 Interpersonal Communication. F, W.
Credits: 4; Prereq: SPC 2300.
Explores interaction in face-to-face settings, including both dyadic and small group communication. Focuses on how communication fosters attraction, productivity, leadership, conflict and conflict resolution, and cohesion.

SPC 3305 Creative Communication: Persons and Interactions. W.
Credits: 3, Prereq: SPC 2300.
A course employing humanistic learning processes to develop open, accepting and spontaneous interpersonal communicative relationships.

SPC 3420 Discussion and Conference Methods. F, W, S, SS.
Credits: 4, Prereq: SPC 2300.
Designed to acquaint the student with principles, methods and theories of discussion and conference planning, and to assist him in developing leadership and conference skills.

SPC 3440 Group Communication Processes. F, W, S, SS.
Credits: 3; Prereq: SPC 2300.
Basic theory and research on the role of communication in small group discussion, examining information search, debate, and decision-making as communication processes. An introduction to the area of small group communication.

SPC 3513 Argumentation. F, W, S, SS.
Credits: 4; Prereq: SPC 2300.
Study of principles of argumentation as they are applied in oral discourse; analysis of controversial propositions, evidence and modes of reasoning.

SPC 3541 Persuasion. F, W, S, SS.
Credits: 4, Prereq: SPC 2300.
Investigation of the persuasion function of human communication. Concerned with the context in which successful persuasion occurs and the variables that affect influence attempts.

SPC 3594 Intercollegiate Debate. F, W, S, SS.
Credits: 1; Prereq: Satisfactory completion of one quarter of intercollegiate debate participation at the University of Florida before first registration in this course.
Analysis of propositions of fact, policy, and definition; library research methods; formal debate structure; participation in intercollegiate debate. May be repeated for maximum of 6 credits.

SPC 3601 Public Speaking. F, W, S, SS.
Credits: 4; Prereq: SPC 2300 or consent of Department Chairman.
Theory and practice in public speaking. Special consideration of audience and situational adaptation, support and organization of ideas, audience attention, and effective delivery.

SPC 3605 Speechwriting. W.
Credits: 4; Prereq: SPC 2300.
Consideration of and practice with word choice and word arrangement as sources of style that influence memorability, credibility, and ease and accuracy of comprehension.

SPC 3680 Rhetorical Criticism. S.
Credits: 4
Exploratory readings and analysis of a spectrum of empirical and speculative theorists on the nature, practice, and criticism of oral discourse with persuasory intent.

SPC 3710 Patterns of Intercultural Communication. F, W, S, SS.
Credits: 4; Prereq: SPC 2300.
Exploration of practices, trends, and difficulties of communicating across cultural boundaries; investigation of guidelines by which cross-cultural communication problems can be mitigated.

SPC 3721 Interracial Communication. S.
Credits: 4; Prereq: SPC 2300.
Designed to promote better interracial understanding and interaction among students through the study of the theoretical aspects of interracial communication and through actual student participation in interracial discussion groups.

SPC 4390 Seminar in Interpersonal Communication Processes. F, W.
Credits: 4; Prereq: SPA 2300; repeatable up to 12 hours.
Rotating topic seminar exploring such interpersonal communication processes as non-verbal communication, group and sex roles and communication, and the communication processes associated with group decision-making.

SPC 4392 Seminar in Interaction Analysis. S.
Credits: 4; Prereq: SPC 2300; repeatable up to 12 hours.
Rotating topic seminar exploring issues, trends, and methods of analyzing interpersonal interaction, including measurement of the quality, content, and amount of communication; topics such as process measurement, field observation, and therapeutic intervention.

SPC 4514 Perspectives on Argumentation. S.
Credits: 4; Prereq: SPC 3513.
Advanced study in theories of argument, with emphasis on pragmatic and ethical considerations in the application of the art.

SPC 4540 Persuasion and Opinion Formation. W.
Credits: 4; Prereq: SPC 2300 and consent of instructor.
Advanced studies in theories of persuasion and investigation of how persuasive communication shapes public opinion. Special consideration given to messages aimed at creating or changing public opinion on contemporary, controversial issues.

SPC 4543 Seminar in Influence Process. F, W, S.
Credits: 4; Prereq: SPA 2300 repeatable up to 12 hours.
Rotating topic seminar exploring such influence processes as the communication of innovations, persuasion and resistance to persuasion, leadership, and communication as power.

SPC 4609 Selected Topics in Public Communication. F, W, S.
Credits: 4; Prereq: SPA 2300 and advanced standing; May be repeated with change of content up to a maximum of 12 credits.
Investigation of focused topics pertaining to theory and practice of speaker-audience communcation.

SPC 4620 Great Debates in American Life. W.
Credits: 4; May be repeated with change of content up to a maximum of 12 credits.
Survey of the public speaking in major controversies related to political, social and intellectual life in America.

SPC 4631 Language and Image in Political Communication.
Credits: 4
A study of symbolic sources of rhetorical effectiveness as employed in various genres of communication in political contexts.

SPC 4931 Honors in Speech, W, S.
Credits: 4; Prereq: A 3.2 GPA in upper division coursework including at least 18 hours in speech.
Course will focus on some current investigation in speech and will require an original contribution from each student. Content varies from term to term. May be repeated for a maximum of 8 credits.

GRADUATE COURSES

SPC 5148 Man-Machine Communication.
Credits: 4

SPC 5149 Applications of Digital Computers to Speech Research.
Credits: 3

SPC 5335 Nonverbal Communication.
Credits: 5

SPC 5610 Persuasion in Social Movements.
Credits: 4; Maximum of 12 credits.

SPC 5905 Special Topics.
Credits: 3 to 5; Maximum of 10 credits.

SPC 6218 Seminar: Human Communication Theory.
Credits: 4

SPC 6239 Studies in Rhetorical Theory.
Credits: 4

SPC 6253 Principles and Theories of General Semantics.
Credits: 4

SPC 6493 Theories of Small Group Communication.
Credits: 4

SPC 6545 Studies in the Processes of Influence.
Credits: 4

SPC 6619 Seminar in American Public Address.
Credits: 4

SPC 6682 Rhetorical Criticism.
Credits: 4

SPC 6905 Individual Study.
Credits: 1 to 10

SPC 6910 Supervised Research.
Credits: 1 to 5††

SPC 6971 Master's Research.
Credits: 1 to 15††

SPC 7190 Seminar in Communication Sciences.
Credits: 3

SPC 7548 Seminar: Theories of Persuasion.
Credits: 4

SPC 7937 Seminar in the Philosophy of Speech Communication.
Credits: 4; Maximum of 8 credits.

Speech Education

SED 4335 Teaching Speech in the Secondary Schools. W, SS.
Credits: 4; Prereq: 8 hours of Speech or consent of instructor.
An analysis of instructional methods and materials in speech at the secondary school level. Designed as a practical guide for the teacher of speech.

EEX 4141 Methods and Materials for Speech Therapy. W.
Credits: 5; Prereq: EDF 3110, ESE 4011, EDE 4203.
Present methods for working as a speech therapist in public schools.

GRADUATE COURSES

SED 5340 Teaching Speech in Higher Education.
Credits: 4

SED 5372 The Modern Forensics Program.
Credits: 4

SED 6930 Seminar; Instructional Development in Speech.
Credits: 4; Prereq: SED 5340 or consent of instructor.

Speech Pathology and Audiology

SPA 2013 Introduction to Laboratory Technique in Speech.
Credits: 3; Prereq: SPC 2300.
An introduction to basic measurement concepts and tools encountered in psychoacoustics, physiological acoustics, acoustic phonetics, speech pathology and audiology.

SPA 3001 Survey of Communication Disorders. F, W, S, SS.
Credits: 3
Basic principles of Speech pathology including consideration of the types, incidence, recognition and cause of speech and language disorders.

SPA 3011 Speech Acoustics. W.
Credits: 4; Prereq: LIN 2711.
An introduction to scientific methodologies, physics of sound and elementary instrumentation related to human speech communication.

SPA 3101 Speech Physiology. S.
Credits: 4; Prereq: LIN 2711.
An introduction to elementary anatomy, physiology and neurophysiology of the speaking mechanism.

SPA 3102 Fundamentals of Hearing. F, S.
Credits: 4; Prereq: Consent of instructor.
Concepts and principles relevant to the normal hearing processes: acoustics, gross anatomy, psychophysical methods and basic subjective correlates of the auditory system.

SPA 3105 Neurophysiology of Hearing. W.
Credits: 3; Prereq: SPA 3102 and consent of instructor.
Neuroanatomy of the auditory system, peripheral and central dynamics of the cochlea, electrophysiological response in the cochlea and in various levels of the auditory system.

SPA 4051 Laboratory in Clinical Speech Pathology Methods: Observation and Evaluation. F, W, S, SS.
Credits: 1††
Supervised clinical/laboratory experience in speech pathology.

SPA 4052 Laboratory in Clinical Speech Pathology Methods: Remediation. F, W, S, SS.
Credits: 1††
Supervised clinical/laboratory experience in therapy.

SPA 4053 Laboratory in Clinical Audiology Methods: Observation and Evaluation. F, W, S, SS.
Credits: 1††
Supervised clinical/laboratory experience in hearing testing.

SPA 4054 Laboratory in Clinical Audiology Methods: Remediation. F, W, S, SS.
Credits: 1††
Supervised clinical/laboratory experience in aural rehabilitation.

SPA 4118 Psychoacoustics I.
Credits: 5; Prereq: SPA 3102.
Lectures, discussions and laboratory work on auditory stimulus, psychoacoustical methodology: general models of auditory processing.

SPA 4121 Auditory Perception of Speech. SS.
Credits: 3; Prereq: SPA 3102 and consent of instructor.
Concepts and principles relevant to the perception of speech with emphasis on the auditory system: psychophysical methods, test materials, and basic subjective correlates of speech perception.

SPA 4200 Principles of Speech Pathology: Articulation Disorders. W, SS.
Credits: 2; Prereq: SPA 3200, 3001 and 3101 or consent of instructor.
Basic principles of diagnosis and therapy for individuals with articulatory disorders.

SPA 4210 Principles of Speech Pathology: Voice Disorders. F.
Credits: 2; Prereq: SPA 3101, 3001 or consent of instructor.
Theory and techniques of diagnosis and therapy for voice disorders.

SPA 4220 Principles of Speech Pathology: Stuttering. F.
Credits: 2; Prereq: SPA 3001 or consent of instructor.
Theory and technique of diagnosis and therapy for stuttering.

SPA 4302 Principles of Audiological Evaluation. F, W, S, SS.
Credits: 4
Basic techniques in pure-tone and speech audiometry. Interpretation of test results.

SPA 4362 Auditory Training and Speechreading. W.
Credits: 4; Prereq: SPA 4302 or consent of instructor.
Methods in auditory training and speechreading in aural rehabilitation.

SPA 4400 Principles of Speech Pathology; Language Disorders. W.
Credits: 2; Prereq: LIN 2701, SPA 3001 or consent of instructor.
Theory and technique of diagnosis and therapy for language disorders.

GRADUATE COURSES

SPA 5111 Theoretical Foundations of Audiology.
Credits: 4

SPA 5119 Psychoacoustics I.
Credits: 5

SPA 5122 Auditory Perception of Speech.
Credits: 4

SPA 5135 Electro-Acoustical Laboratory.
Credits: 3

SPA 5202 Principles of Speech Pathology: Articulation Disorders.
Credits: 4

SPA 5211 Principles of Speech Pathology: Voice Disorders.
Credits: 4

SPA 5223 Principles of Speech Pathology: Stuttering.
Credits: 4

SPA 5304 Principles of Audiological Evaluation.
Credits: 4

SPA 5322 Auditory Training and Speechreading.
Credits: 4

SPA 5403 Principles of Speech Pathology: Language Disorders.
Credits: 4

SPA 5423 Speech and Language for the Deaf and Hard-of-Hearing.
Credits: 4

SPA 5553 Principles of Speech Pathology and Audiology: Diagnosis and Appraisal.
Credits: 4

SPA 6107 Cochlear Biophysics.
Credits: 5

SPA 6120 Psychoacoustics II.
Credits: 5

SPA 6125 Psychophysiology of Hearing.
Credits: 5

SPA 6140 Experimental Phonetics: Laryngeal Function.
Credits: 3

††Grading is on a SU basis only.

SPA 6141 Experimental Phonetics: Articulatory Dynamics.
Credits: 3

SPA 6145 Experimental Phonetics: Acoustic Theory.
Credits: 3

SPA 6146 Experimental Phonetics: Special Topics.
Credits: 3 to 9; maximum of 9.

SPA 6155 Proseminar in Communication Sciences.
Credits: 5

SPA 6204 Seminar in Speech Pathology: Articulation Disorders.
Credits: 2

SPA 6206 Seminar in Speech Pathology: Myofunctional Disorders.
Credits: 2

SPA 6207 Seminar in Speech Pathology: Neurogenic Articulation Disorders.
Credits: 2

SPA 6214 Seminar in Speech Pathology: Alaryngeal Speech.
Credits: 2

SPA 6215 Seminar in Speech Pathology: Voice Disorders.
Credits: 2

SPA 6216 Seminar in Speech Pathology: Special Voice Problems.
Credits: 2

SPA 6226 Seminar in Speech Pathology: Stuttering in Adults.
Credits: 2

SPA 6227 Seminar in Speech Pathology: Stuttering in Children.
Credits: 2

SPA 6231 Seminar in Speech, Hearing and Language: Cerebral Palsy.
Credits: 2

SPA 6245 Seminar in Speech, Hearing and Language: Cleft Palate.
Credits: 2

SPA 6305 Seminar in Audiology: Children's Audiometry.
Credits: 2

SPA 6313 Seminar in Audiology: Diagnostic Procedures for Peripheral Disorders.
Credits: 4

SPA 6314 Seminar in Audiology: Diagnostic Procedures for Central Hearing Disorders.
Credits: 2

SPA 6318 Seminar in Audiology: Diagnostic Procedures for Special Problems in Hearing.
Credits: 2

SPA 6327 Seminar in Audiology: Aural Rehabilitation.
Credits: 2

SPA 6345 Seminar in Audiology: Hearing Aids.
Credits: 4

SPA 6364 Seminar in Audiology: Psychology of Deafness.
Credits: 2

SPA 6407 Seminar in Speech Pathology: Language Disorders.
Credits: 2

††Grading is on a S-U basis only.

SPA 6410 Seminar in Speech, Hearing, and Language: Aphasia.
Credits: 2

SPA 6411 Seminar in Language Pathology: Aphasia in Children.
Credits: 2

SPA 6435 Seminar in Speech, Hearing, and Language: Mental Retardation.
Credits: 2

SPA 6445 Seminar in Language Pathology: Psychosocial Etiologies.
Credits: 2

SPA 6521 Clinical Practice in Speech Pathology: Diagnosis.
Credits: 1 to 10††

SPA 6524 Clinical Practice in Speech Pathology: Therapy.
Credits: 1 to 15††

SPA 6531 Clinical Practice in Hearing Measurement.
Credits: 1 to 10††

SPA 6533 Clinical Practice in Aural Rehabilitation.
Credits: 1 to 10††

SPA 6600 Organization and Administration of Speech Pathology and Audiology Programs.
Credits: 4

SPA 6933 Special Topics in Communication Sciences.
Credits: 1††

SPA 6940 Supervised Teaching.
Credits: 1 to 5 ††

SPA 7127 Seminar in Speech Recognition.
Credits: 3

SPA 7128 Seminar in Audition.
Credits: 3

SPA 7354 Seminar in Audiology: Hearing Conservation Noise Control.
Credits: 4

SPA 7523 Practicum in Speech Pathology in a Medical Dental Setting.
Credits: 3 to 10††

SPA 7536 Practicum in Audiology in a Medical Setting.
Credits: 3 to 10††

SPA 7980 Doctoral Research.
Credits: 1 to 15††

STATISTICS
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Scheaffer, R.L., Chairman; Agresti, A.G.; Blight, B.J.N.; Boyett, J.M.; Carter, R.L.; Chew, V.; Conlon, S.L.; Cornell, J.G.; Dietrich, F.H.; Khuri, A.I.; Lezotte, D.C.; Littell, R.C.; Marks, R.G.; Martin, F.G.; McClave, J.T.; Mendenhall, W.; Pop-Stojanovic, Z.R.; Rao, P.V.; Saw, J.G.; Smidt, R.K.; Wackerly, D.D.; Yang, M.C.K.

An undergraduate major in statistics is offered in both the College of Agriculture and the College of Arts and Sciences. Students planning an undergraduate major in statistics should consult one of the departmental major advisers, Dr. F. H. Dietrich, 508 Nuclear Sciences Center, Dr. J. J. Shuster, 511 Nuclear Sciences Center, or Dr. R. K. Smidt, 521 Nuclear Sciences Center. In preparation for this program the student should take the following courses during the freshman and sophomore years: MAC 3311 and MAC 3312. Upper division courses will include STA 4321, 4322, 4202, 4203, 4204.

The 12 additional hours of the statistics major requirements will consist of CIS, MAC, and STA courses, chosen in consultation with the adviser. Selection will depend on the student's future plans.

Students taking Statistics as a major may receive "Honors in Statistics" if they (1) obtain a 3.1 grade point average in upper division work; (2) obtain a 3.6 grade point average for all major courses; and (3) include a total of at least seven additional hours of approved course work in CIS, STA, or MAC (beyond the requirements for the major).

The minimum number of credit hours required for a degree with a major in statistics is 44.

STA 3013 Statistics for The Social Sciences. F, W, S, SS.
Credits: 4; Prereq: None.
Introduction to descriptive and inferential statistical techniques with applications in the Social Sciences.

STA 3023 Introduction to Statistics 1. F, W, S, SS.
Credits: 4
Development of the fundamental statistical concepts and their relationship to the social and physical sciences.

STA 3024 Introduction to Statistics 2. W, S, SS.
Credits: 3; Prereq: STA 3023 or equivalent.
An introduction to the analysis of variance. Chisquare and contingency tables. Nonparametric statistical methods and applications.

STA 3032 Engineering Statistics. F, W, S, SS.
Credits: 3
A survey of the basic concepts in statistics with engineering application.

STA 4033 Mathematical Statistics with Computer Applications. F, S.
Credits: 5; Prereq: MAC 3312 or COC 3110 or equivalent.
A basic course in mathematical statistics with computer applications. Probability distribution, expectations, parameter estimation, hypothesis testing, regression and analysis of variance.

STA 4173 Biometry. S.
Credits: 4; Prereq: STA 4332 or equivalent.
Specialized statistical methods in the medical sciences. Contents include: Large sample theory, Analysis of Survival, Dose response curves, Contingency tables, Clustering in time and space, Semi-Markov models in clinical trials, and Binary regression.

STA 4202 Design of Experiments and Analysis of Variance. F.
Credits: 3; Prereq: STA 3023 or equivalent.
Principles of designing an experiment; the analysis of variance for completely randomized, randomized block and Latin square designs; Factorial experiments.

STA 4203 Regression Analysis. W.
Credits: 3; Prereq: STA 4202.
Simple linear regression; multiple linear regression; correlation methods; non-linear regression.

STA 4204 Introduction to Nonparametric and Multivariate Statistics. S.
Credits: 4; Prereq: STA 4203.
Introduction to nonparametric statistics—analysis of variance by ranks, nonparametric estimation, rank correlation, contingency tables. Introduction to multivariate statistics—nontechnical exposition of discriminant analysis, factor analysis, principal components, and multivariate analysis of variance.

STA 4222 Sample Survey Design. S, SS.
Credits: 3; Prereq: STA 3023 or equivalent.
An introduction to the design of sample surveys in the economic and social sciences. Questionnaire construction, stratified sampling, ratio and regression estimators.

STA 4321 Mathematical Statistics 1. F, W.
Credits: 4; Prereq: MAC 3312.
An introduction to the theory of probability,

random variables and their probability distributions. Expectations of random variables. Distribution of functions of variables; introduction to the theory of estimation.

STA 4322 Mathematical Statistics 2. W, S.
Credits: 4; Prereq: STA 4321.
Tests of hypotheses, introduction to least squares, correlation, analysis of variance and design of experiments. Nonparmetric methods.

STA 4404 Discrete Probability. F, S.
Credits: 4
Basic probability theory, random variables, probability distributions, and expectations. Application to model building and decision making.

STA 4905 Individual Work. F, W, S, SS.
Credits: 1 to 5; Prereq: permission of department.
Special topics designed to meet the needs and interest of individual students. May be repeated with change of content up to a maximum of 15 credits.

STA 4930 Special Topics in Statistics.
Credits: 3; Permission of the Department chairman.
Special topics designed to meet the needs and interests of individual students. May be repeated with change of content up to a maximum of 15 credits.

GRADUATE COURSES

STA 5106 Computer Programs in Statistical Analysis 1. W.
Credits: 2

STA 5107 Computer Programs in Statistical Analysis 2. S.
Credits: 2

STA 6166 Statistical Methods in Research 1.
Credits: 4

STA 6167 Statistical Methods in Research 2.
Credits: 4

STA 6168 Advanced Methods of Statistics 3.
Credits: 3

STA 6176 Biostatistics 1.
Credits: 4

STA 6177 Biostatistics 2.
Credits: 4

STA 6178 Biostatistics 3.
Credits: 4

STA 6206 Design and Analysis of Experiments 1.
Credits: 3

STA 6207 Design and Analysis of Experiments 2.
Credits: 3

STA 6208 Design and Analysis of Experiments 3.
Credits: 4

STA 6226 Sampling Theory and Application 1.
Credits: 4

STA 6227 Sampling Theory and Application 2.
Credits: 4

STA 6246 Theory of Least Squares.
Credits: 4

STA 6247 Advanced Topics in Design and Analysis.
Credits: 4

STA 6267 Sequential Methods.
Credits: 4

STA 6326 Introduction to Theoretical Statistics 1.
Credits: 3

STA 6327 Introduction to Theoretical Statistics 2.
Credits: 3

STA 6328 Introduction to Theoretical Statistics 3.
Credits: 3

STA 6446 Probability Theory 1.
Credits: 4

STA 6447 Probability Theory 2.
Credits: 4

STA 6448 Probability Theory 3.
Credits: 4

STA 6526 Nonparametric Statistics 1.
Credits: 4

STA 6606 Stochastic Systems Analysis 1.
Credits: 3

STA 6707 The Analysis of Multivariate Data.
Credits: 4

STA 6746 Multivariate Analysis 1.
Credits: 4

STA 6747 Multivariate Analysis 2.
Credits: 4

STA 6826 Stochastic Processes 1.
Credits: 3

STA 6827 Stochastic Processes 2.
Credits: 3

STA 6828 Stochastic Processes 3.
Credits: 3

STA 6857 Applied Time Series Analysis.
Credits: 4

STA 6876 Time Series 1.
Credits: 4

STA 6877 Time Series 2.
Credits: 4

STA 6900 Problems in Statistics.
Credits: 1 to 5

STA 6905 Individual Work.
Credits: 1 to 5

STA 6910 Supervised Research.
Credits: 1 to 5††

STA 6934 Special Topics in Statistics.
Credits: 4

STA 6938 Seminar.
Credits: 1††

STA 6940 Supervised Teaching.
Credits: 1 to 5††

STA 6971 Master's Research.
Credits: 1 to 15††

STA 7346 Statistical Inference 1.
Credits: 4

STA 7347 Statistical Inference 2.
Credits: 4

STA 7348 Statistical Inference 3.
Credits: 4

STA 7980 Doctoral Research.
Credits: 1 to 15††

THEATRE
College of Fine Arts

INSTRUCTIONAL STAFF 1977-78

Hooks, E. James, Chairman; Brandman, R.; Green, R.L.; Shelton, D.L.; Wehlburg, A.F.C.; West, G.L.; Zimmerman, L.L.

All students who are considering Theatre as a major should consult the departmental academic advisor soon after enrolling in the University. In the Department of Theatre an upper division total of 95 credits is required for the B.F.A. degree. This total must include the following core curriculum: TPA 3200, TPP 3650, 3310, 3314, THE 4040, TPA 4041, THE 4945, THE 4110, THE 4111, ENL 4135, 4136, MUL 2001.

Additional requirements include a 35 credit specialization in either Performance, Design-Technical, Costumes, or Dance. A total of 45 credits in theatre courses is required for the B.A. degree. The total must include the following core curriculum: ORI 2001, TPP 3110, TPA 3200, TPP 3650, TPP 3310, TPP 3314

A drama emphasis leading to the B.A. in Education is available through the Language Arts major offered by the College of Education. Also available is a theatre major offered through the College of Arts and Sciences, leading to the degree Bachelor of Arts.

Dance

DAN 3500 Dance Production. F, W, S.
Credits: 1 to 3; Prereq: consent of instructor.
Individual and group composition in modern dance for production including staging and costuming. May be repeated with change of content up to a maximum of 9 credits.

DAN 4103 Seminar in Dance History and Philosophy. F.
Credits: 4
Survey of the historical development of the art dance with reference to social contexts, periods and cultures involved; seminars, readings, and observations of various cultural events and audio-visual materials.

Dance Activities

DAA 2101 Advanced Modern Dance. F, W, S.
Credits: 2; Prereq: DAA 1100 and/or consent of instructor.
May be repeated with change of content up to a maximum of 2 credits.

DAA 3102 Modern Dance III. F, S.
Credits: 3; Prereq: DAA 2101; consent of instructor.
Modern dance including experiences in intermediate level technique, readings, observations, and movement exploration exercises emphasizing literal expressive modes. May be repeated with change of content up to a maximum of 9 credits.

DAA 3700 Dance Composition. F, W, S.
Credits: 2; Prereq: DAE 2320 or permission of chairman.
Modern dance composition with respect to form, design, dynamics, and rhythm.

DAA 4103 Modern Dance IV. W.
Credits: 3; Prereq: DAA 3102; consent of instructor.
Modern dance including experiences in advanced level technique, readings, observations, informal performance, and movement exploration exercises emphasizing nonrepresentational expressive modes. May be repeated with change of content up to a maximum of 9 credits.

Dance Education

DAE 2320 Modern Dance Teaching Methods. F, W, S.
Credits: 3
Skills and Teaching techniques.

Oral Interpretation

ORI 2001 Oral Performance of Literature I. F, W, S, SS.
Credits: 4
An introduction to the presentation mode of interpreting literature and drama, with an emphasis on the improvement and specialized application of vocal skills.

††Grading is on a S-U basis only.

Descriptions

ORI 2002 Oral Performance of Literature II. F, W, S, SS.
Credits: 4, Prereq: ORI 2001 and/or permission of instructor
An advanced study of the presentational mode of interpreting literature and drama with an emphasis on the aesthetic properties of form and style.

GRADUATE COURSES

ORI 6430 Theories of Interpretive Reading.
Credits: 4

Theatre

THE 2000 Theatre Appreciation 1. F, W, S, SS.
Credits. 4
To develop an appreciation of theatre through a study of theatre history and literature.

THE 4110 History of the Theatre I. F.
Credits: 4, Prereq: THE 2000, TPA 3200, TPP 3310.
Development of the theatre from its beginning through the Middle Ages.

THE 4111 History of the Theatre II. W.
Credits: 4; Prereq: THE 2000, TPA 3200, TPP 3310.
Development of the theatre from the Middle Ages to the 18th Century.

THE 4112 History of the Theatre III. S.
Credits: 4; Prereq: THE 2000, TPA 3200, TPP 3310.
Development of the theatre from the 18th Century to the present.

THE 4730 Production of Plays in the Secondary School. F.
Credits: 4, Prereq: TPA 3200, TPA 3060 or permission of instructor.
Elements of play production for the secondary school. An emphasis on basic procedures, problems of organization, and facility adaptation and development.

THE 4760 The Teaching of Drama in the Secondary Schools. W.
Credits: 4; Prereq: THE 2000 or permission of instructor.
Practical philosophy of drama education as it functions at the secondary school level.

THE 4905 Individual Study. F, W, S, SS.
Credits: 1 to 4; Prereq: Permission of instructor and Department Chairman
A project, reading, or research course. May be repeated with change of content up to a maximum of 8 credits.

THE 4945 Theatre Production: A Practicum in Repertory Theatre. SS.
Credits: 1 to 12; Prereq: TPP 3112, TPA 3010, 3270, 4232, and consent of staff.
A practical production experience in repertory theatre with direct skills application in all areas of theatre production, and special emphasis on the problems of organizing a multi-production repertory program.

THE 4949 Individual Co-operative Professional Work Experience.
Credits: 5 to 12; Prereq: 4FA or above classification and consent of instructor and employer.
One term industrial employment including extra work according to pre-approved outline. Practical theatre work under industrial supervision.

GRADUATE COURSES

THE S116 History of the Theatre I. F.
Credits: 4

THE S117 History of the Theatre II. W.
Credits. 4

THE S118 History of the Theatre III. S.
Credits: 4

††Grading is on a S-U basis only.

THE 5949 Individual Co-operative Professional Work Experience.
Credits: 5 to 12

THE 6200 Studies in Contemporary American Theatrical Practices.
Credits: 4

THE 6203 American Plays, Players, and Playwrights I.
Credits: 4

THE 6204 American Plays, Players, and Playwrights II.
Credits: 4

THE 6230 Styles in Theatrical Art I.
Credits: 4

THE 6231 Styles in Theatrical Art II.
Credits: 4

THE 6232 Styles in Theatrical Art III.
Credits: 4

THE 6234 Studies in Contemporary European Theatrical Practices.
Credits: 4

THE 6285 Readings in Theatrical History I.
Credits: 4

THE 6286 Readings in Theatrical History II.
Credits: 4

THE 6287 Art History of the Theatre.
Credits: 4

THE 6560 Seminar in Theatre Aesthetics I.
Credits: 4

THE 6561 Seminar in Theatre Aesthetics II.
Credits: 4

THE 6905 Individual Study.
Credits: 1 to 10; Prereq: Permission of instructor and Department Chairman.

THE 6910 Supervised Research.
Credits: 1 to 5††; Permission of instructor and Department Chairman.

THE 6913 Theatre Research.
Credits: 4

THE 6940 Supervised Teaching.
Credits: 1 to 5††; Prereq: Permission of instructor and Department Chairman.

THE 6971 Master's Research.
Credits: 1 to 5††

THE 6972C Individual Project.
Credits: 1 to 15††; Prereq: Min. equivalent of year's work completed at graduate level toward MFA degree.

Theatre Performance & Performance Training

TPP 2700 Voice and Diction Workshop. F, W, S, SS.
Credits: 4
The performance oriented workshop designed for the development and application of voice and diction skills.

TPP 3110 Acting I. F, S.
Credits: 4; Prereq: ORI 2001 or permission of instructor.
A study of the basic techniques and theories of acting.

TPP 3111 Acting II. W.
Credits: 4; Prereq: TPP 3110 or permission of instructor.
A study of acting styles and their relation to theatre aesthetics.

TPP 3112 Acting III. S.
Credits: 4, Prereq: TPP 3110 and TPP 3111.
Study of the Acting programs inherent in the form and character structure of the period play, with exercises emphasizing delivery and period stage conventions.

TPP 3310 Directing I. W.
Credits: 4; Prereq. TPP 3110 and TPA 3200 or permission of instructor.
Basic principles of play direction, including problems of selecting, casting, and rehearsing plays.

TPP 3311 Directing II. S.
Credits: 4, Prereq: TPP 3110 TPA 3200 TPP 3310 or permission of instructor.
Analysis of selected types of dramatic literature for appropriate directing style, and practical experience in directing projects.

TPP 3510 Stage Movement I. F.
Credits: 4; Prereq: Majors only, or permission of instructor.
Basic principles and techniques of stage movement for the actor, including development of the body as an instrument of stage characterization.

TPP 3511 Stage Movement II. W.
Credits: 4; Prereq: TPP 3510 or permission of instructor.
Advanced principles and techniques of stage movement, including styles of period movement.

TPP 3650 Production Analysis of the Playscript. F.
Credits: 4; Prereq: permission of instructor.
An analysis of classic and commercial playscripts for the purpose of isolating specialized production problems and identifying the production potential of varied artistic form constructs. For majors only.

GRADUATE COURSES

TPP S192 Graduate Acting I. F.
Credits: 4; Prereq: TPP 3112 or permission of instructor.

TPP 5294L Summer Repertory Theatre. SS.
Credits: 1 to 12; Prereq: Consent of Staff.

TPP 6193 Graduate Acting II.
Credits: 4; Prereq: THE 5118 or equivalent, and consent of instructor.

TPP 6234 Acting Ensemble.
Credits: 4 to 12; Prereq: TPP 6140 or equivalent and permission of instructor.

TPP 6921 Directing Workshop.
Credits: 4 to 12; Prereq: TPP 3650, 3310, 3314 or equivalent, TPP 6934 and permission of instructor.

TPP 6934 Advanced Problems of Stage Direction.
Credits: 5

Theatre Production and Administration

TPA 3010 Stagecraft and Design II. W.
Credits: 4; Prereq: TPA 3200 or permission of instructor.
Specialized techniques of stagecraft and design problems.

TPA 3200 Stagecraft and Design I. F, S.
Credits: 4; Prereq: TPP 2000 or permission of instructor.
The basic techniques of scene construction, lighting and painting with an introduction to design principles.

TPA 3220 Technical Theatre Principles. F.
Credits: 4; Prereq: TPA 3010 or permission of instructor.
A study of the specialized techniques and design factors essential to stage scenery, lighting, and costumes.

TPA 3250 Stage Makeup. W.
Credits: 3; Prereq: THE 2000, TPP 3110.
Study and application of the principles, materials,

and procedures for effective execution of theatrical makeup. Majors only, except by permission of instructor.

TPA 3270 Advanced Equipment Utilization. F.
Credits: 5; Prereq: TPA 3200, 3010, 3220 or permission of instructor.
Designed for the advanced student to become conversant with the uses and functions of sophisticated theatre construction tools as used in furniture building, steel construction and properties making. Additionally, principles and application of sound as it is used in the theatre will be covered.

TPA 3290L Theatre Practice. F, W, S.
Credits: 1 to 4
Practical problems in theatre performance and production. An introduction to and practice of the standardized methods and procedures of theatre production.

TPA 4024 Advanced Lighting Design. F.
Credits: 4; Prereq: TPA 3010 or permission of instructor.
Lighting equipment, control, design and aesthetics. Application of the principles of, and responses to, color and light in the theatre.

TPA 4047 Production Costume Design. F.
Credits: 4; Prereq: TPA 4231, 4232 or permission of instructor.
The application of fundamentals of costume design to costume requirements fostered by specific production concepts.

TPA 4062 Problems in Scene Design. W.
Credits: 4; Prereq: TPA 3200, 3010, 3220, 3310 or permission of instructor.
Scene Design as an art: A consideration of the spatial and aesthetic factors operative in the scenic elements with special emphasis on pragmatic consideration of the design process.

TPA 4230 Theatrical Costume I. F.
Credits: 4; Prereq: TPA 3010 or permission of instructor.
The history of stage costume from antiquity to the post-Elizabethan period, and a study of the basic design elements involved. Laboratory experience in costume construction.

TPA 4231 Theatrical Costume II. W.
Credits: 4; Prereq: TPA 4230 or permission of instructor.
The history of stage costume and a study of basic design elements, fabrics and patterns. Laboratory experience in costume construction.

TPA 4232 Theatrical Costume III. S.
Credits: 4; Prereq: TPA 4231 or permission of instructor.
Principles of costume design with construction and design projects.

GRADUATE COURSES

TPA 5048 Production Costume Design. F.
Credits: 4

TPA 5084 Problems in Scene Design. F.
Credits: 4

TPA 6023 Seminar and Practicum in Modern Theatre Design and Practice.
Credits: 4; Maximum of 12 credits.

TPA 6085 Advanced Problems in Scene Design.
Credits: 5

TPA 6087 Costume Management.
Credits: 4; Prereq: THE 4040, TPA 4041, TPA 4042 or equivalent, and permission of instructor.

TPA 6219 Backgrounds in Modern Theatrical Practice.
Credits: 4

TPA 6275 Advanced Equipment Utilization.
Credits: 5; Prereq: TPA 3200, TPA 3060, TPA 3220 or permission of instructor.

TPA 6935 Seminar in Production Theory Analysis and Application.
Credits: 4

URBAN AND REGIONAL PLANNING
College of Architecture

INSTRUCTIONAL STAFF 1977-78

Starnes, E.M., Director; Alexander, J.F.; Bartley, E.R.; Feiss, C.; Milliman, J.W.; Weismantel, W.; Wetterqvist, O.F.

Economic Problems & Policy

ECP 6615 Urban Economics.
Credits: 5

URP 4000 Preview of Urban & Regional Planning.
Credits: 1 to 3

GRADUATE COURSES

URP 6061 Professional Administration.
Credits: 4

URP 6101 Planning Theory.
Credits: 4

URP 6102 Design Fundamentals.
Credits: 4

URP 6131 Community Development Powers.
Credits: 3

URP 6132 Regulation of Land Use.
Credits: 4

URP 6203 Critical Observation.
Credits: 4

URP 6231 City Models.
Credits: 4

URP 6261 Regiometrics.
Credits: 4

URP 6271 Planning Information System.
Credits: 4

URP 6301 Urban Studio.
Credits: 1 to 12

URP 6311 Regional Studio.
Credits: 1 to 12

URP 6312 Land Use Planning.
Credits: 4

URP 6331 Component Studio.
Credits: 1 to 12

URP 6341 New Program Studio.
Credits: 1 to 12

URP 6421 Environmental Impact Statements.
Credits: 4

URP 6700 The Capitol Web.
Credits: 4

URP 6801 The Urban Ideal.
Credits: 4

URP 6802 20th Century City and Regional Planning.
Credits: 4

URP 6811 Community Values and Goals.
Credits: 4

URP 6821 Urban and Regional Systems.
Credits: 4

URP 6905 Exploration and Directed Study.
Credits: 1 to 9

URP 6910 Supervised Research.
Credits: 1 to 5††; max of 12.

URP 6931 Topical Seminar.
Credits: 2 to 5; max. of 9

URP 6940 Supervised Teaching.
Credits: 1 to 5††; max of 15.

URP 6971 Master's Research.
Credits: 1 to 15††

URP 6979 Terminal Project.
Credits: 1 to 9

VEGETABLE CROPS

INSTRUCTIONAL STAFF 1977-78

Kelly, J.F., Chairman; Bassett, M.J.; Cantliffe, D.J.; Gull, D.D.; Hall, C.B.; Halsey, L.H.; Hannah, L.C.; Kostewicz, S.R.; Locascio, S.J.; Marlowe, G.A.; Marvel, M.E.; Montelaro, J.; Showalter, R.K.; Stephens, J.M.; Thompson, B.D.; William, R.D.

VEC 3100 Introduction to World's Vegetables. F, S.
Credits: 3
Types of vegetables grown throughout the world discussed with emphasis on their importance, adaptation, use, and nutritional value.

VEC 3200 Vegetable Gardening. F, S.
Credits: 2††
A laboratory course primarily for non-majors who need the basic principles of vegetable gardening. A garden will be required to be grown by each student.

VEC 3224 Principles of Vegetable Production. F.
Credits: 3; Prereq. or coreq: BOT 1020.
Introduction to commercial vegetable production. Laboratory covering cool-season vegetable crops.

VEC 4225 Commercial Cool-Season Vegetable Crops. W.
Credits: 3; Prereq: VEC 3224 or consent of instructor.
The application of scientific principles to the production of cool-season vegetable crops.

VEC 4226 Commercial Warm-Season Vegetable Crops. S.
Credits: 4; Prereq: VEC 3224
The application of scientific principles to the production of warm-season vegetable crops. Laboratory covering the production of these crops.

VEC 4410 Vegetable Crops Nutrition. W.
Credits: 3; Prereq: BOT 3503.
Chemical and physiological principles of vegetable nutrition including plant requirements, nutrient sources and methods of application.

VEC 4432 Growth and Development of Vegetable Crops. F.
Credits: 4; Prereq: BOT 3503.
Physiological and environmental factors affecting growth and development of vegetable crops.

VEC 4452 Principles of Postharvest Horticulture. S.
Credits: 4; Prereq: PLS 2031 or permission of instructor.
Biological principles involved in harvesting, grading, packaging, transportation, and marketing vegetable crops and their effects on quality maintenance.

VEC 4905 Topics in Vegetable Crops. F, W, S, SS.
Credits: 2 to 4; Maximum of 12 credits; with permission of instructor.
Selected topics in one or more fields of vegetable

††Grading is on a S-U basis only.

crops as: nutrition, varietal development, herbicides and other cultural treatments, physiology and postharvest handling. (For additional courses related to Vegetable Crops-See Plant Science.)

VEC 4941 Full Time Practical Work Experience in Vegetable Crops. F, W, S, SS.
Credits: 1 to 4, S-U Grade only. Prereq: Prior arrangement with adviser, approval of Department Chairman and Dean.
Practical work must be a new experience and related to the field of study.

VETERINARY SCIENCE
College of Agriculture

INSTRUCTIONAL STAFF 1977-78

Cornelius, C.E.; Chairman; Becker, H.N.; Berkhoff, G.A.; Besch, E.L.; Bradley, R.E., Sr.; Bruss, M.L.; Burridge, M.J.; Buss, D.D.; Cardeilhac, P.T.; Chen, D.; Cripe, W.S.; Drost, M.; Edds, G.T.; Forrester, D.J.; Gaskin, J.M.; Gelatt, K.N.; Gronwall, R.R.; Halliwell, R.E.; Harvey, J.W.; Himes, J.A.; Meyerholz, G.W.; Neal, F.C.; Neilson, J.T.; Palmore, W.P.; Popp, J.A.; Simpson, C.F.; White, F.H.

VES 3202C Anatomy and Physiology of Domestic Animals. W, SS.
Credits: 5; Prereq: ZOO 2010 (or BSC 2010, 2011 and 2012) and ASG 3003.
Structure and function of the skeletal, muscular, endocrine, reproductive, circulatory, respiratory, digestive, urinary and nervous systems. Laboratory to include appropriate demonstrations on these systems, particularly animal reproduction.

VES 4103 Animal Diseases and their Prevention. F.
Credits: 3; Prereq: VES 3202C, or consent of instructor.
The principal diseases of livestock and practical methods for their prevention and control.

VES 4131 Principles of Laboratory Animal Disease. W.
Credits: 5; Prereq: 3202C, ANS 3031, ANS 4403.
Review of diseases with emphasis on their prevention and control.

VES 4162 Poultry Diseases. W.
Credits: 3; Prereq: VES 3202C.
Causes, symptoms, methods of prevention and treatment of diseases of poultry.

VES 4611 Environmental Toxicology and Public Health. F.
Credits: 4; Prereq: CHM 3211.
Drugs and toxicants, their metabolism as influenced by food or residues; drug induced deficiency diseases; adverse reactions; mycotoxins; common poisons, their diagnosis, prevention and treatment.

GRADUATE COURSES

VES 5302 Veterinary Parasitology 1. W.
Credits: 5; Prereq: ZOO 2010 (or BSC 2010, 2011 and 2012), ZOO 3203, ZOO 3207, MCB 3103, ENV 4660 or consent of instructor.

VES 5303 Veterinary Parasitology 2. S.
Credits: 5; Prereq: VES 5302 or consent of instructor.

VES 6242C Veterinary Physiology 1.
Credits: 5

VES 6243C Veterinary Physiology 2.
Credits: 5

VES 6322 Helminthology.
Credits: 5

††Grading is on a S-U basis only.

VES 6342 Immunology of Animal Parasites.
Credits: 5

VES 6362 Parasitic Diseases in the Tropics and Subtropics.
Credits: 5

VES 6402 Veterinary Microbiology.
Credits: 6

VES 6503 Veterinary Pathology.
Credits: 5

VES 6602 Veterinary Toxicology 1.
Credits: 5

VES 6603 Veterinary Toxicology 2.
Credits: 5

VES 6651 Veterinary Pharmacology 1.
Credits: 5

VES 6652 Veterinary Pharmacology 2.
Credits: 5

VES 6765 Veterinary Research Techniques.
Credits: 4

VES 6905 Problems in Veterinary Science.
Credits: 1 to 5

VES 6910 Supervised Research.
Credits: 1 to 5††

VES 6931 Seminar in Veterinary Science.
Credits: 1

VES 6940 Supervised Teaching.
Credits: 1 to 5††

VES 6971 Master's Research.
Credits: 1 to 15††

ZOOLOGY
College of Arts and Sciences

INSTRUCTIONAL STAFF 1977-78

Emmel, T.C., Chairperson; Anderson, J.F.; Auffenberg, W.; Berner, L.; Bloom, S.A.; Brockmann, H.J.; Brodkorb, P.; Carr, A.F., Jr.; Carr, W.E.S.; Crump, M.L.; Deevey, E.S., Jr.; DeWitt, R.M.; Dickinson, J.C., Jr.; Drummond, B.A.; Eisner, T.; Feinsinger, P.; Forrester, D.J.; Giesel, J.T.; Gilbert, C.R.; Hardy, J.W.; Humphrey, S.R.; Johnson, F.C.; Johnston, D.W.; Kaufmann, J.H.; LaBarbera, M.C.; Lanciani, C.A.; Lawrence, P.O.; Lloyd, J.E.; Maturo, F.J.S., Jr.; McNab, B.K.; Nordlie, F.G.; Reiskind, J.; Schwassmann, H.O.; Thompson, F.G.; Walker, T.J.; Wallbrunn, H.M.; Webb, S.D.; Westfall, M.J., Jr.; Wolff, R.G.

UNDERGRADUATE STUDENTS who intend to major in this department should plan a program in which introductory chemistry is taken as early as possible in the Freshman year.

The minimum number of credits required for a Zoology major is 38, including the following: General Biology — BSC 2010C, 2011C, 2012C, Genetics lecture and laboratory — PCB 3063, 3653L and at least one course from each of the following four sets: (a) Vertebrate Zoology — ZOO 3303C or Invertebrate Zoology — ZOO 3203C; (b) Functional Vertebrate Anatomy — ZOO 3703C or Comparative Chordate Embryology — ZOO 3605C; (c) General Ecology — PCB 4043C or Evolution — PCB 4675; (d) Comparative Histology — ZOO 4755C or Animal Physiology — PCB 4745C. One year of college physics — PHY 2050-2052-2050L-2052L, chemistry through organic — CHM 3210-3211L or CHM 3200-3200L and BCH 4313-4203 and mathematics through MAC 3312 are also required. Quantitative analysis and physical chemistry are recommended. The student is advised to begin the sequences as soon as possible.

Transfer students must take a minimum of three Zoology courses at the University of Florida as part of the requirements for a major in Zoology.

DEPARTMENTAL HONORS

To qualify for honors in Zoology a student must attain a 3.3 average in all Zoology work attempted and complete the following with at least a B grade: 8 credits in ZOO 490S. In addition, a research paper based on the ZOO 490S work must be presented to and approved by the student's research advisor. This paper must contain experimental results and a discussion of those results.

ZOO 2013 & 2014 or BSC 2010C, 2011C, & 2012C are prerequisites for all courses in the department unless otherwise indicated.

Applied Biology

APB 5415C Radioisotope Theory and Techniques. W.
Credits: 5; Prereq: CHM 3120C or consent of instructor

Entomology

ENY 3004 General Entomology. Upon Demand.
Credits: 4
A general course in insect biology that considers phylogeny, anatomy, physiology, ecology and behavior of insects in the context of organic evolution. Emphasis is on processes and principles.

Experimental Psychology

GRADUATE COURSES

EXP 6108 Survey of Sensory Systems. F.
Credits: 4; Prereq: PCB 4745C or BMS 6510.

EXP 6109 Seminar in Sensory Processes. S.
Credits: 1††

Process Biology

PCB 3063 Genetics. F, W, S.
Credits: 4
The course stresses fundamental properties of inheritance in eukaryotic organisms. Basic concepts are developed for the nature, organization, transmission, expression, recombination, and function of genetic materials, and principles are derived for genetically characterizing populations.

PCB 3653L Laboratory Analyses of Variation. F, W, S.
Credits: 2; Coreq. or Prereq: PCB 3063 or equivalent.
The practical application of genetical concepts in explaining the basis and inheritance of organic variation. This course provides the laboratory supplement to PCB 3063.

PCB 3673 Evolution Today. F, W, S.
Credits: 3
Evolutionary theories and their historical development. Available for students in the social sciences and humanities.

PCB 4043C General Ecology. F, S.
Credits: 5; Prereq: CHM 2047 and an introductory course in statistics are recommended.
Ecological factors and organization in terrestrial, freshwater and marine environments. Field work is an examination of representative biotic communities of the Gainesville area.

PCB 4675 Evolution. F.
Credits: 5; Prereq: PCB 3063 or AGR 3303-3305L.
Processes and mechanisms of evolution, including population genetics, speciation, patterns of evolution and molecular evolution.

PCB 4745C Animal Physiology. F, W, S.
Credits: 5; Prereq: General Physics or Instructor's permission.

PCB 5415C Behavioral Ecology.
Credits: 5; Prereq: ZOO 3803C or PCB 4043C.

PCB 5545 Physiological Genetics.
Credits: 4; Prereq: PCB 3063 or equivalent.

PCB 6049 Seminar in Ecology. F, W, S.
Credits: 2

PCB 6069 Topics in Genetics.
Credits: 2 to 4

PCB 6307C Liminology. S.
Credits: 5

PCB 6317C Marine Ecology. F.
Credits: 5

PCB 6357C Tropical Biology — An Ecological Approach. W, SS.
Credits: 12

PCB 6377C Physiological Ecology of Vertebrates. F.
Credits: 5

PCB 6447C Community Ecology. S.
Credits: 5

PCB 6496C Stream Ecology.
Credits: 5

PPCB 6577C Ecological Genetics. W.
Credits: 5

PCB 6686C Experimental Population Ecology. W.
Credits: 4

PCB 6796C Comparative Sensory Physiology. W.
Credits: 5

Psychobiology

PSB 6607 Research Methods in the Sensory Systems. W.
Credits: 4; Max. 8.

Zoology

ZOO 2013C Introductory Zoology Laboratory.
Credits: 4
The anatomy, physiology, life history, and behavior of representative invertebrate and vertebrate animals.

ZOO 2014 Principles of Animal Biology.
Credits: 5; Prereq: ZOO 2013C, CHM 2040 or CHM 2045C.
Considerations of historical development of the science; cell structure and function; replication of molecules, cells and individuals; inheritance, evolution and homostatis; and complex interrelationships among organisms and their environments.

ZOO 3203C Invertebrate Zoology. F, S.
Credits: 5
The structure, taxonomy, evolutionary relationship and life histories of the invertebrate animals.

ZOO 3303C Vertebrate Zoology. W.
Credits: 5
The evolution, taxonomy, ecology and behavior of vertebrates. Emphasis is on the adaptations of wild animals to their natural habitats.

ZOO 3513C Animal Behavior. S.
Credits: 5
The causes, origins and evolution of animal behavior emphasizing field observations and experiments on the behavior of a variety of animal groups.

ZOO 3605C Comparative Chordate Embryology. F, S.
Credits: 5
The analysis of development of chordate organ systems accompanied by laboratory work dealing with the frog, chick, and pig.

ZOO 3703C Functional Vertebrate Anatomy. F, W.
Credits: 5
The morphology of the various chordate animals are accompanied by laboratory work dealing with a selected series of chordates.

ZOO 3803C Field Problems in Vertebrate Zoology. S.
Credits: 4, Prereq: ZOO 3303C.
The laboratories include field work in representative local habitats, and individual projects.

ZOO 4235C Animal Parasitology. S.
Credits: 5
Life cycles, morphology, and physiology of the helminth and protozoan parasites of vertebrate animals.

ZOO 4404C Integrated Marine Biology. SS.
Credits: 12
Physical, biological, and ecological aspects of the marine environment; natural history of common marine and coastal organisms. Laboratory emphasis is on field work and research projects.

ZOO 4473C Avian Biology. S.
Credits: 5; Prereq: ZOO 3703C.
The basic biological characterisitcs of birds which, as exceptionally unique flying vertebrates, are confronted with a spectrum of problems in terms of anatomy, physiology, behavior, migration, and population ecology.

ZOO 4755C Comparative Histology. W.
Credits: 5; Prereq: ZOO 3703C.
Comparative aspects of both structure and function of vertebrate tissues.

ZOO 4905 Individual Studies in Zoology. F, W, S, SS.
Credits: 4; Prereq: A 3.0 overall honor point average and a 3.0 in at least 24 hours of approved major courses in zoology, and consent of instructor and head of department.
Qualified students and the instructor concerned may choose a particular topic or problem for study. May be repeated for full credit.

ZOO 4926 Special Topics in Zoology. F, W, S, SS.
Credits: 1 to 5; Prereq: consent of instructor.
Lectures, conferences or laboratory sessions covering selected topics of current interests in Zoology. May be repeated for full credit with change of content.

ZOO 4940 Practical Experience in Teaching Zoology.
Credits: 2††; Prereq: Senior status with recommendations from two faculty including the course instructor.
Participation in teaching lower division Zoology courses with practical experience in instructional procedures, testing and grading, course and laboratory preparation and laboratory assistance. Cannot be used to satisfy minimum hour requirement for Zoology major.

GRADUATE COURSES

ZOO 5115C Vertebrate Paleontology. F.
Credits: 4

ZOO 5405C The Biology of Marine Animals. W.
Credits: 4

ZOO 6116C Ancient Vertebrate Faunas. S.
Credits: 4

ZOO 6126 Historical Ecology of the Pleistocene. F.
Credits: 4

ZOO 6207C Advanced Invertebrate Zoology. S.
Credits: 5

ZOO 6246C Helminthology. W.
Credits: 5

ZOO 6336C Principles of Systematic Zoology. W.
Credits: 4

ZOO 6416C Biology of the Amphibia. S.
Credits: 5

ZOO 6456C Ichthyology. S.
Credits: 5

ZOO 6466C Biology of the Reptilia. W.
Credits: 5

ZOO 6476C Ornithology. W.
Credits: 4

ZOO 6486C Mammalogy. F.
Credits: 5

ZOO 6506C Ethology. S.
Credits: 4

ZOO 6816 Zoogeography. F.
Credits: 3

ZOO 6857C Advanced Tropical Zoology. SS.
Credits: 12

ZOO 6905 Individual Studies in Zoology. F, W, S, SS.
Credits: 1 to 5

ZOO 6910 Supervised Research.
Credits: 1 to 5††

ZOO 6927 Special Topics in Zoology. F, W, S.
Credits: 4

ZOO 6939 Seminar in Animal Behavior.
Credits: 4

ZOO 6940 Supervised Teaching.
Credits: 1 to 5††

ZOO 6971 Master's Research.
Credits: 1 to 5††

ZOO 7980 Doctoral Research.
Credits: 1 to 15††

UNIVERSITY COLLEGE

INTERDISCIPLINARY HONORS AND INTEGRATIVE STUDIES
University College

Interdisciplinary Honors

INSTRUCTIONAL STAFF 1977-78

Sciadini, F., Chairman.

Interdisciplinary Honors: Variable Topics.
Credits: 4 each
This course is designed for beginning honors students to improve their research skills.

UNIVERSITY COLLEGE
Integrative Studies Program

The Integrative Studies Program is a certificate program which seeks to provide the models and practice necessary to locate and understand the central concerns at the heart of all university offerings. The program is open to any student of Sophomore or Junior standing. Students take a minimum of 17 credits over a two-year period, all of which may go toward the fulfillment of general education requirements. Students who finish the program will receive a certificate and may request that a special comprehensive recommendation be

††Grading is on a S-U basis only.

placed in their school dossiers. By focusing on themes which reflect relationships among disciplines, the Integrative Studies Program establishes a milieu in which students and teachers from diverse fields may learn to discover and articulate the root concerns of educated living in a complex society.

Focus Course. In the Fall and Winter quarters of each year, a 4-credit Focus Course open to all students, is offered. The course, taught by three faculty members from different fields, introduces and develops the program's theme for that year. Any student who wishes to enter the program must begin with a Focus course. The Focus Course however, is also open to students not particlpating in the Integrative Studies Program.

Integrative Seminars. Students enter 2-credit Integrative seminars in the winter of their first year in the program. They take one Integrative Seminar each quarter for four quarters. Each seminar, led by two faculty members from different fields, is restricted to students in the program and builds upon their common work in the Focus Course. Students stay with the same faculty pair for the Winter and Spring of their first year, then shift to a second faculty pair for the Fall and Winter of their second year.

Field Problem. In the final quarter of the program, students take a 5-credit field problem. During this time, a group of 3-4 students labor at the solution of an immediate local or state problem which demands inventiveness, application of one's disciplinary background and the cooperative use of the knowledge of others. The committee directing the program will endeavor to arrange community internships or working experience with the appropriate agencies for all students involved in the Field Problems. The Field Problem affords students the opportunity to assess for themselves their progress toward independent integrative learning as they attempt to pull together the themes and approaches from the two years.

Structure.

Year I 1978-79: Life In Other Natural Worlds

	Credits
Fall Focus: Worlds of Consciousness	4
Winter Focus: Disaster and Human Survival	4
Integrative Seminar: Hidden Forces	2
Integrative Seminar: World of Powerlessness	2
Spring: Integrative Seminar: Hidden Forces	2
Integrative Seminar: Worlds of Powerlessness	2

Year II 1979-80: Life in Artificial Worlds

	Credits
Fall Focus: Life In Utopias	4
Advanced Integrative Seminar	2
Advanced Integrative Seminar	2
Winter: Myths and Madness	4
Advanced Integrative Seminar	2
Advanced Integrative Seminar	2
Integrative Seminar	2
Integrative Seminar	2
Spring: Integrative Seminar	2
Integrative Seminar	2
Field Problem	5

IDS 2188 Integrative Studies. Special Topics.
Credits: 4; May be repeated with change of topic up to a maximum of 8 credits.
Interdisciplinary and integrative inquiry into broad topics central to a liberal education. Designed to acquaint students with perspectives on inter-relationships of areas of human understanding and provide them with tools for interpreting and synthesizing this knowledge. Topics announced annually as offered.

IDS 2301 Integrative Seminar. The World of Powerlessness.
Credits: 2
This course seeks to create a learning environment in which students may gain experience in integrating materials and viewpoints of the various disciplines, all subsumed under the issue of powerlessness. The course explores powerlessness as an internal state of consciousness and as an external state of the world. It also explores perceptions and expressions of powerlessness as they are reflected in literature, political rhetoric, and science.

IDS 2342 Integrative Studies Focus: Worlds of Consciousness — A Matter of Mind.
Credits: 4
The course will explore several "worlds of consciousness" in terms of an integrating concept, the mind-matter polarity. The course is structured so that students will be required to discover relationships among the various methodologies, concepts and patterns studies. A set of connected exercises and problems will encourage the student to increase his or her awareness of the different worlds of consciousness while working toward a unifying concept of his or her world of consciousness.

IDS 2343 Integrative Studies Focus: Disaster and Human Survival.
Credits: 4
The course explores the impact of disaster upon individuals and communities, strategies of coping and adaption at the individual, cultural and institutional levels, and the impact of disasters on western-world views.

IDS 3302 Integrative Seminar. Hidden Forces.
Credits: 2
This course seeks to encourage integration by concentrating on the effect of hidden forces on the hierarchy found in the world, both in human and non-human environments. The seminar will deal with the criteria by which we recognize new forces — fundamental physical forces and social psychological forces.

Integrative Studies

INSTRUCTIONAL STAFF 1977-78

Burns, A.; Peterson, L.; Schmidt, P.

IDS 3158 Integrative Studies For Pre-professional students: Architecture.
Credits: 5
This course offers general education in a format designed for the architecture student. Drawing on insights which emanate from classic works in the social sciences, humanities, and physical sciences, this course explores trends in man's relationship to nature, self, and society. It utilizes the metaphor of "cathedral" to introduce students to perspectives on the dilemmas of modern culture and to emphasize connections, relationships, and patterns of behavior which define and characterize contemporary life. Taught through the cooperative efforts of faculty from various disciplines, this course weeks to enrich the pre-professional student's intellectual horizons without sacrificing the student's professional interest and to establish a setting for putting one's chosen field into relation with other fields and specialties.

TABLE 1

STATEWIDE COURSE NUMBERS AND THEIR HISTORICAL UNIVERSITY OF FLORIDA EQUIVALENTS

STATEWIDE COURSE NUMBERS		HISTORICAL UNIVERSITY OF FLORIDA EQUIVALENTS	
ACC	2001	ATG	201
ACC	2103	ATG	301
ACC	2301	ATG	203
ACC	3123	ATG	302
ACC	3401	ATG	304
ACC	3421	ATG	305
ACC	4443	ATG	401
ACC	4501	ATG	407
ACC	4741	ATG	418
ACC	4905	ATG	496
ACC	4934	ATG	498
ACC	5011	ATG	510
ACC	5231	ATG	507
ACC	5313	ATG	503
ACC	5513	ATG	504
ACC	5531	ATG	505
ACC	5551	ATG	528
ACC	5745	ATG	508
ACC	5865	ATG	517
ACC	6290	ATG	600
ACC	6411	ATG	611
ACC	6512	ATG	605
ACC	6692	ATG	606
ACC	6811	ATG	603
ACC	6821	ATG	608
ACC	6831	ATG	604
ACC	6905	ATG	696
ACC	6910	ATG	697
ACC	6940	ATG	698
ACC	6971	ATG	699
ACC	7292	ATG	702
ACC	7395	ATG	707
ACC	7805	ATG	701
ACC	7925	ATG	790
ACC	7980	ATG	799
ADE	5081	EDV	570
ADE	5472	EDV	571
ADE	6260	EDA	610
ADE	6262	EDA	615
ADE	6385	EDV	671
ADE	6671	EDV	670
ADE	7282	EDV	770
ADE	7672	EDV	771
ADV	3000	ADV	306
ADV	4101	ADV	410
ADV	4102	ADV	420
ADV	4103	ADV	402
ADV	4200	ADV	415
ADV	4300	ADV	411
ADV	4400	ADV	433
ADV	4500	ADV	407
ADV	4600	ADV	403
ADV	4700	ADV	450
ADV	4800	ADV	412
ADV	4905	ADV	496
ADV	4930	ADV	490
ADV	4931	ADV	465
ADV	4932	ADV	431
ADV	4949	ADV	499
ADV	6503	COM	632
ADV	6504	COM	602
AEB	3103	FRE	301
AEB	3111	FRE	304
AEB	3123	FRE	305
AEB	3133	FRE	310
AEB	3141	FRE	330
AEB	3300	FRE	320
AEB	3306	FRE	322
AEB	3413	FRE	332
AEB	3934	FRE	300
AEB	4152	FRE	410
AEB	4164	FRE	411
AEB	4172	FRE	465
AEB	4224	FRE	440
AEB	4314	FRE	421
AEB	4324	FRE	424
AEB	4334	FRE	425
AEB	4343	FRE	426
AEB	4344	FRE	427
AEB	4421	FRE	412
AEB	4434	FRE	430
AEB	4511	FRE	460
AEB	4672	FRE	423
AEB	4726	FRE	447
AEB	4905	FRE	496
AEB	4931	FRE	409
AEB	4935	FRE	401
AEB	4949	FRE	400
AEB	5612	FRE	541
AEB	6182	FRE	604
AEB	6184	FRE	610
AEB	6186	FRE	611
AEB	6252	FRE	640
AEB	6263	FRE	641
AEB	6363	FRE	605
AEB	6373	FRE	620
AEB	6383	FRE	621
AEB	6384	FRE	622
AEB	6385	FRE	623
AEB	6428	FRE	663
AEB	6453	FRE	630
AEB	6455 C	FRE	631
AEB	6465	FRE	632
AEB	6483	FRE	682
AEB	6533	FRE	660
AEB	6553	FRE	608
AEB	6571	FRE	661
AEB	6572	FRE	662
AEB	6592	FRE	607
AEB	6625	FRE	680
AEB	6645	FRE	645
AEB	6651	FRE	646
AEB	6674	FRE	650
AEB	6815	FRE	690
AEB	6905	FRE	696
AEB	6910	FRE	697
AEB	6933	FRE	603
AEB	6940	FRE	698
AEB	6971	FRE	699
AEB	7980	FRE	799
AEE	3200	AED	324
AEE	3313	AED	301
AEE	3323	AED	321
AEE	4224	AED	421
AEE	4227	AED	423
AEE	4424	AED	407
AEE	4504	AED	419
AEE	4624	AED	428
AEE	4905	AED	496
AEE	4941	AED	400
AEE	4942	AED	439
AEE	4943	AED	440
AEE	6206	ADV	610
AEE	6300	AED	605
AEE	6325	AED	620
AEE	6417	AED	601
AEE	6521	AED	604
AEE	6523	AED	621
AEE	6541	AED	622
AEE	6611	AED	625
AEE	6905	AED	696
AEE	6910	AED	697
AEE	6912	AED	627
AEE	6933	AED	626
AEE	6940	AED	698
AEE	6946	AED	624
AEE	6971	AED	699
AFA	2000	ASC	201
AFA	4936	ASC	453
AFA	4937	ASC	454
AFH	3100	HY	343
AFH	3200	HY	344
AFH	4250	HY	439
AFH	4450	HY	437
AFH	5934	HY	506
AFH	6934	HY	660
AFR	1101 C	MAF	101
AFR	1111 C	MAF	102
AFR	1120 C	MAF	103
AFR	2130 C	MAF	201
AFR	2131 C	MAF	202
AFR	2140 C	MAF	203
AFR	3220 C	MAF	311
AFR	3230 C	MAF	312
AFR	3231 C	MAF	313
AFR	4201 C	MAF	411
AFR	4210 C	MAF	412
AFR	4211 C	MAF	413
AFS	2002	ASC	202
AFS	2002	BES	202
AFS	4935	ASC	450
AGE	4012	AGE	404
AGE	4023	AGE	405
AGE	4112	AGE	460
AGE	4121	AGE	461
AGE	4142	AGE	466
AGE	4212	AGE	450
AGE	4232	AGE	451
AGE	4312	AGE	421
AGE	4612	AGE	410
AGE	4632	AGE	426
AGE	4712	AGE	475
AGE	4905	AGE	496
AGE	4932	AGE	403
AGE	4949	AGE	499
AGE	4949	CEP	499
AGE	6031	AGE	603
AGE	6152	AGE	672
AGE	6252	AGE	671
AGE	6332	AGE	673
AGE	6442	AGE	674
AGE	6905	AGE	696
AGE	6910	AGE	697
AGE	6931	AGE	601
AGE	6933	AGE	691
AGE	6940	AGE	698
AGE	6971	AGE	699
AGE	6986	AGE	602
AGG	1101	AG	180
AGG	2501	AG	200
AGG	4603	AG	420
AGR	3210	AY	311
AGR	3303	AY	362
AGR	4001 C	AY	414
AGR	4231	AY	432
AGR	4242	AY	405
AGR	4244	AY	409
AGR	4246	AY	413
AGR	4248	AY	415
AGR	4321	AY	465
AGR	4905	AY	496
AGR	4931	AY	484
AGR	4941	AY	400
AGR	6233	AY	636
AGR	6249	AY	647
AGR	6307	AY	662
AGR	6311	AY	658
AGR	6323	AY	665
AGR	6353	AY	660
AGR	6380	AY	682
AGR	6390	AY	664
AGR	6390	AL	664
AGR	6422	AY	641
AGR	6442	AY	644
AGR	6511	AY	646
AGR	6661 C	AY	611
AGR	6661 C	F5	611
AGR	6751	AY	642
AGR	6905	AY	696
AGR	6910	AY	697
AGR	6932	AY	688
AGR	6933	AY	684
AGR	6940	AY	698
AGR	6971	AY	699
AGR	7980	AY	799
AMH	2010	HY	245
AMH	2020	HY	246
AMH	3315	AM5	355
AMH	3315	HY	355
AMH	3421	HY	352
AMH	3422	HY	353
AMH	3423	HY	354
AMH	3523	HY	384
AMH	4041	HY	454
AMH	4041	AM5	454
AMH	4110	HY	458
AMH	4130	HY	459
AMH	4160	HY	404
AMH	4170	HY	405
AMH	4172	HY	444
AMH	4220	HY	485
AMH	4231	HY	486
AMH	4270	HY	487
AMH	4307	HY	440

TABLE 1

AMH	4309	HY	441
AMH	4402	HY	451
AMH	4403	HY	452
AMH	4423	HY	450
AMH	4444	HY	453
AMH	4460	HY	442
AMH	4530	HY	445
AMH	4546	HY	446
AMH	4547	HY	447
AMH	4572	HY	406
AMH	4578	HY	457
AMH	4579	HY	456
AMH	4935	HY	455
AMH	4935	AMS	455
AMH	5905	HY	596
AMH	5930	HY	502
AMH	6117	HY	646
AMH	6149	HY	647
AMH	6169	HY	648
AMH	6179	HY	649
AMH	6201	HY	650
AMH	6239	HY	651
AMH	6279	HY	652
AMH	6379	HY	614
AMH	6393	HY	642
AMH	6498	HY	643
AMH	6549	HY	641
AML	2020	EH	271
AML	2021	EH	272
AML	3113	EH	309
AML	4210	EH	473
AML	4301	EH	474
AML	6341	EH	655
AML	6342	EH	660
AML	7191	EH	755
AML	7192	EH	760
AMS	2030	AMS	200
AMS	4905	AMS	496
ANS	2002	AL	201
ANS	3007	AL	309
ANS	3079	AL	340
ANS	3236	AL	334
ANS	4234 C	AL	434
ANS	4238	AL	440
ANS	4244	AL	411
ANS	4264	AL	413
ANS	4274	AL	414
ANS	4614	AL	423
ANS	4615	AL	429
ANS	4634 C	AL	415
ANS	4635	AL	451
ANS	4941	AL	400
ANS	5446	AL	527
ANS	6288	AL	605
ANS	6368	AL	602
ANS	6388	AL	659
ANS	6448	AL	651
ANS	6448 L	AL	652
ANS	6458	AL	650
ANS	6472	AL	653
ANS	6472 L	AL	654
ANS	6636	AL	604
ANS	6711	AL	658
ANS	6715	AL	656
ANS	6721	AL	657
ANS	6723	AL	655
ANS	6751	AL	607
ANS	6905	AL	696
ANS	6910	AL	697
ANS	6932	AL	601
ANS	6933	AL	660
ANS	6940	AL	698
ANS	6971	AL	699
ANS	7980	AL	799
ANT	2402	APY	202
ANT	2410	APY	200
ANT	3141	APY	300
ANT	3241	APY	370
ANT	3241	RN	370
ANT	3302	APY	380
ANT	3511	APY	302
ANT	4035	APY	482
ANT	4036	APY	483
ANT	4124	APY	421
ANT	4153	APY	437
ANT	4158	APY	439
ANT	4185	APY	401
ANT	4255	APY	450
ANT	4274	APY	425
ANT	4304	APY	435
ANT	4312	APY	438
ANT	4326	APY	441
ANT	4332	APY	410
ANT	4352	APY	443
ANT	4403	APY	480
ANT	4404	APY	400
ANT	4426	APY	404
ANT	4433	APY	407
ANT	4442	APY	434
ANT	4451	APY	405
ANT	4476	APY	417
ANT	4525	APY	473
ANT	4552	APY	471
ANT	4555	APY	472
ANT	4586	APY	475
ANT	4905	APY	496
ANT	4907	APY	495
ANT	4914	APY	498
ANT	4930	APY	490
ANT	5165	APY	546
ANT	5195	APY	574
ANT	5246	APY	513
ANT	5266	APY	512
ANT	5336	APY	542
ANT	5337	APY	543
ANT	5338	APY	540
ANT	5346	APY	545
ANT	5354	APY	544
ANT	5366	APY	521
ANT	5376	APY	520
ANT	5423	APY	502
ANT	5466	APY	510
ANT	5467	APY	588
ANT	5477	APY	518
ANT	5479	APY	517
ANT	5485	APY	563
ANT	5486	APY	564
ANT	5507	APY	585
ANT	5528	APY	589
ANT	5546	APY	550
ANT	5717	APY	590
ANT	6038	APY	601
ANT	6186	APY	621
ANT	6188	APY	611
ANT	6276	APY	604
ANT	6286	APY	622
ANT	6356	APY	625
ANT	6387	APY	640
ANT	6388	APY	612
ANT	6408	APY	602
ANT	6428	APY	667
ANT	6429	APY	609
ANT	6434	APY	608
ANT	6445	APY	616
ANT	6447	APY	668
ANT	6478	APY	670
ANT	6487	APY	645
ANT	6489	APY	675
ANT	6547	APY	650
ANT	6588	APY	623
ANT	6707	APY	660
ANT	6716	APY	615
ANT	6718	APY	620
ANT	6725	APY	662
ANT	6728	APY	661
ANT	6735	APY	617
ANT	6737	APY	610
ANT	6905	APY	696
ANT	6910	APY	697
ANT	6915	APY	695
ANT	6917	APY	600
ANT	6933	APY	690
ANT	6940	APY	698
ANT	6945	APY	694
ANT	6971	APY	699
ANT	7980	APY	799
APB	2150	CBS	211
APB	2150 L	CBS	264
APB	2151	CBS	221
APB	2152	CBS	231
APB	2170	MCS	200
APB	2170 L	MCS	201
APB	2991	CBS	291
APB	2992	CBS	292
APB	2993	CBS	293
APB	2994	CBS	21X
APB	2995	CBS	22Y
APB	2996	CBS	23Z
APB	3203	MED	331
APB	3223	HRP	331
APB	4503	HRP	432
APB	4544 C	MCS	416
APB	4544 L	MCS	417
APB	4545 L	MCS	418
APB	5405 L	MCS	586
APB	5415	BTY	565
APB	5415 C	ZY	565
APB	6933	MCS	649
ARC	1115 C	AE	112
ARC	1126 C	AE	113
ARC	1131 C	AE	115
ARC	1211	AE	121
ARC	2311 C	AE	235
ARC	2313 C	AE	236
ARC	2461	AE	245
ARC	2580	AE	255
ARC	3291 C	AE	396
ARC	3381 C	AE	333
ARC	3382 C	AE	385
ARG	3383 C	AE	335
ARC	3463 C	AE	346
ARC	3551 C	AE	356
ARC	3581 C	AE	355
ARC	3631 C	AE	366
ARC	3681 C	AE	364
ARC	3711	AE	375
ARC	4274	AE	465
ARC	4384 C	AE	435
ARC	4385 C	AE	442
ARC	4386 C	AE	436
ARC	4464 C	AE	445
ARC	4561 C	AE	456
ARC	4682 C	AE	467
ARC	4731	AE	475
ARC	4741	AE	476
ARC	5535	AE	552
ARC	5641	AE	561
ARC	5791	AE	571
ARC	5792	AE	572
ARC	5800	AE	581
ARC	5810	AE	582
ARC	5890	AE	583
ARC	5891	AE	584
ARC	6090	AE	601
ARC	6265	AE	629
ARC	6275	AE	628
ARC	6345 C	AE	631
ARC	6346 C	AE	632
ARC	6347 C	AE	633
ARC	6355 C	AE	634
ARC	6356 C	AE	635
ARC	6521	AE	657
ARC	6541	AE	651
ARC	6552	AE	652
ARC	6555	AE	653
ARC	6565	AE	654
ARC	6566	AE	655
ARC	6571	AE	656
ARC	6591	AE	658
ARC	6592	AE	659
ARC	6632	AE	664
ARC	6633	AE	665
ARC	6642	AE	660
ARC	6643	AE	661
ARC	6651	AE	666
ARC	6652	AE	667
ARC	6684	AE	662
ARC	6685	AE	663
ARC	6691	AE	668
ARC	6692	AE	669
ARC	6713	AE	671
ARC	6735	AE	672
ARC	6742	AE	673
ARC	6750	AE	675
ARC	6751	AE	676
ARC	6761	AE	674
ARC	6771	AE	677
ARC	6793	AE	678
ARC	6851	AE	681
ARC	6852	AE	682
ARC	6853	AE	683
ARC	6854 C	AE	684
ARC	6855 C	AE	685
ARC	6860	AE	686

ARC	6910	AE	697
ARC	6911	AE	621
ARC	6912	AE	622
ARC	6913	AE	623
ARC	6940	AE	698
ARC	6971	AE	699
ARE	3312	EDE	332
ARE	4047	SCA	401
ARE	4243	SCA	402
ARE	4244	SCA	403
ARE	5313	EDE	531
ARE	5315	EDE	532
ARE	6047	ED	671
ARE	6141	ED	673
ARE	6148	ED	675
ARE	6388	ED	676
ARE	6648	ED	678
ARH	2050	ART	207
ARH	2051	ART	208
ARH	2052	ART	209
ARH	3130	ART	316
ARH	3171	ART	317
ARH	3200	ART	318
ARH	3510	ART	314
ARH	3520	ART	327
ARH	3530	ART	323
ARH	3541	ART	321
ARH	3542	ART	322
ARH	3605	ART	328
ARH	3613	ART	324
ARH	3614	ART	329
ARH	3650	ART	325
ARH	3800	ART	309
ARH	4310	ART	420
ARH	4311	ART	421
ARH	4312	ART	422
ARH	4331	ART	423
ARH	4332	ART	424
ARH	4350	ART	425
ARH	4431	ART	427
ARH	4432	ART	428
ARH	4452	ART	429
ARH	4453	ART	430
ARH	4495	ART	408
ARH	4905	ART	496
ARH	4935	ART	490
ARH	5805	ART	500
ARH	5905	ART	596
ARH	6791 C	ART	655
ARH	6897	ART	611
ARH	6898	ART	621
ARH	6899	ART	622
ARH	6910 C	ART	697
ARH	6911	ART	651
ARH	6971	ART	699
ART	1201 C	ART	101
ART	1201 C	ART	101
ART	1203 C	ART	102
ART	1300 C	ART	103
ART	1301 C	ART	104
ART	2001 C	ART	210
ART	2110 C	ART	280
ART	2205 C	ART	205
ART	2280 C	ART	260
ART	2302 C	ART	206
ART	3100 C	SCA	330
ART	3111 C	ART	380
ART	3112 C	ART	381
ART	3150 C	ART	383
ART	3151 C	ART	384
ART	3158 C	ART	385
ART	3233 C	ART	360
ART	3234 C	ART	361
ART	3235 C	ART	368
ART	3282 C	ART	362
ART	3310 C	ART	350
ART	3311 C	ART	351
ART	3400 C	ART	355
ART	3401 C	ART	356
ART	3510 C	ART	353
ART	3520 C	ART	354
ART	3600 C	ART	341
ART	3601 C	ART	342
ART	3605 C	ART	345
ART	3606 C	ART	346
ART	3701 C	ART	357
ART	3702 C	ART	358
ART	3830 C	ART	303
ART	4113 C	ART	480
ART	4237 C	ART	460
ART	4239 C	ART	467
ART	4241 C	ART	468
ART	4312 C	ART	450
ART	4402 C	ART	455
ART	4531 C	ART	453
ART	4604 C	ART	441
ART	4703 C	ART	457
ART	4905 C	ART	496
ART	5905 C	ART	596
ART	6340 C	ART	650
ART	6835	ART	655
ART	6910 C	ART	697
ART	6927 C	ART	651
ART	6940	ART	698
ART	6971	ART	699
ART	6973	ART	659
ASG	3003	ADP	311
ASG	3313	ADP	322
ASG	3403	ADP	314
ASG	3404	ADP	315
ASG	4334	ADP	407
ASG	4931	ADP	421
ASG	4992	ADP	422
ASG	5221	ADP	535
ASH	3302	HY	382
ASH	3303	HY	383
ASH	3403	HY	381
ASH	3521	HY	385
ASH	3550	HY	386
ASH	4441	HY	482
ASH	4442	HY	483
ASH	5388	HY	505
ASH	6904	HY	682
ASI	6105	ATY	621
ASI	6106	ATY	622
ASI	6115	ATY	623
ASI	6116	ATY	624
ASI	6205	ATY	611
ASI	6206	ATY	612
ASI	6207	ATY	613
ASN	2001	AS	281
ASN	2001	SSC	281
ASN	4935	AS	483
AST	1002	ATY	141
AST	1022 L	ATY	142
AST	2003 C	ATY	240
AST	2004 C	ATY	241
AST	3015 C	ATY	316
AST	3016 C	ATY	317
AST	3034	ATY	350
AST	3082 C	ATY	300
AST	3652	ATY	305
AST	3653	ATY	306
AST	4905	ATY	496
AST	5043	ATY	503
AST	5113	ATY	510
AST	5114	ATY	511
AST	5600	ATY	517
AST	6165	PS	633
AST	6165	ATY	633
AST	6166	PS	634
AST	6166	PS	634
AST	6166	ATY	634
AST	6167	PS	637
AST	6167	ATY	637
AST	6168	PS	638
AST	6168	ATY	638
AST	6169	PS	636
AST	6169	ATY	636
AST	6214	ATY	605
AST	6215	ATY	606
AST	6216	ATY	607
AST	6265	ATY	651
AST	6275	ATY	643
AST	6276	ATY	644
AST	6277	ATY	645
AST	6278	ATY	646
AST	6306	ATY	608
AST	6406	ATY	631
AST	6506	ATY	601
AST	6507	ATY	602
AST	6606	ATY	617
AST	6607	ATY	618
AST	6905	ATY	696
AST	6910	ATY	697
AST	6935	ATY	680
AST	6940	ATY	698
AST	6971	ATY	699
AST	7157	ATY	721
AST	7279	ATY	741
AST	7939	ATY	790
AST	7980	ATY	799
BCC	5100	MED	584
BCC	5110	MED	591
BCC	5120	MED	579
BBC	5130	MED	586
BCC	5140	MED	592
BCC	5150	MED	585
BBC	5151	MED	572
BCC	5160	MED	593
BCC	5170	MED	583
BCH	3023	BTY	370
BCH	3613	BCH	351
BCH	4203	BCH	412
BCH	4313	BCH	411
BCH	4905	BCH	496
BCH	5055	BCH	512
BCH	5055 L	BCH	513
BCH	5056	BCH	578
BCH	5878	BCH	521
BCH	5879	BCH	522
BCH	6065	BCH	601
BCH	6156 C	BCH	615
BCH	6206	BCH	602
BCH	6296	BCH	614
BCH	6415	BCH	603
BCH	6746	BCH	612
BCH	6876	BCH	606
BCH	6910	BCH	697
BCH	6936	BCH	616
BCH	6937	BCH	617
BCH	6940	BCH	698
BCH	6971	BCH	699
BCH	7077	BCH	724
BCH	7257	BCH	723
BCH	7627	BCH	721
BCH	7727	BCH	722
BCH	7980	BCH	799
BCN	1210	BCN	101
BCN	2400	ESM	241
BCN	3223	BCN	321
BCN	3224	BCN	322
BCN	3225	BCN	323
BCN	3256 C	BCN	301
BCN	3281 L	BCN	324
BCN	3401	ESM	342
BCN	3431	BCN	312
BCN	3461	BCN	313
BCN	3611	BCN	331
BCN	4012	BCN	402
BCN	4227	BCN	424
BCN	4462	BCN	414
BCN	4464	BCN	415
BCN	4471	BCN	416
BCN	4500	BCN	441
BCN	4510	BCN	445
BCN	4521	BCN	443
BCN	4612	BCN	432
BCN	4700	BCN	451
BCN	4710	BCN	453
BCN	4713	BCN	455
BCN	4720	BCN	454
BCN	4750	BCN	452
BCN	4751	BCN	403
BCN	5226	BCN	503
BCN	5463	BCN	501
BCN	5470	BCN	506
BCN	5528	BCN	520
BCN	5625	BCN	504
BCN	5715	BCN	555
BCN	5905	BCN	505
BCN	6910	BCN	697
BCN	6931	BCN	601
BCN	6932	BCN	602
BCN	6933	BCN	603
BCN	6934	BCN	604
BCN	6940	BCN	698
BCN	6971	BCN	699
BES	1310	BES	256
BES	2121	BES	211
BES	2291	BES	291
BES	2351	BES	253
BES	2391	BES	292
BES	2411	BES	259

TABLE 1

BES	2430	BES	254	BMS	6614	MED	644	BTE	4360	EDV	442
BES	2491	BES	293	BMS	6615	MED	645	BTE	4364	EDV	441
BES	2930	BES	251	BMS	6616	MED	649	BTE	4762	EDV	446
BES	3141	BES	332	BMS	6620	MED	647	BTE	4905	EDV	496
BES	3241	BES	352	BMS	6621	MED	646	BTE	4949	EFV	443
BMS	4010	MED	437	BMS	6630	MED	690	BTE	6371	EFV	646
BMS	4011	MED	438	BMS	6631	MED	692	BTE	6373	EDV	643
BMS	4012	MED	436	BMS	6640	MED	642	BTE	6378	EDV	642
BMS	4021	MED	406	BMS	6641	MED	691	BTE	6379	EDV	641
BMS	4022	MED	400	BMS	6642	MED	693	BTE	6671	EDV	644
BMS	4023	MED	407	BMS	6642 L	MED	694	BTE	6935	EDV	647
BMS	4024	MED	408	BMS	6700 C	MED	610	BTE	6948	EDV	645
BMS	4025	MED	405	BMS	6930	MED	669	BUL	4100	BA	401
BMS	4905	MED	496	BMS	7142 C	MED	741	BUL	4112	BA	402
BMS	5000	MED	545	BMS	7143 C	MED	746	BUL	4305	BA	403
BMS	5001	MED	546	BMS	7165 C	MED	742	CAP	3210	CHE	303
BMS	5002	MED	542	BMS	7200 C	MED	722	CAP	3800	CIS	301
BMS	5003	MED	543	BMS	7210 C	MED	723	CAP	4621	CIS	439
BMS	5100 C	MED	501	BMS	7220 C	MED	724	CAP	4721	CIS	468
BMS	5110	MED	503	BMS	7262 C	MED	721	CAP	5009	BA	560
BMS	5168 C	MED	502	BMS	7313	MED	752	CAP	5021	BA	540
BMS	5201 C	MED	540	BMS	7421	MED	701	CBH	3003	PSY	377
BMS	5300 C	MED	551	BMS	7422	MED	702	CBH	4023 C	PSY	477
BMS	5301 C	MED	554	BMS	7423	MED	703	CBH	5085	PSY	577
BMS	5465	MED	566	BMS	7467	MED	704	CBH	6056	PSY	677
BMS	5511	MED	518	BMS	7513	MED	717	CBH	7088	PSY	777
BMS	5520 C	MED	520	BMS	7533	MED	716	CCJ	3020	CRJ	301
BMS	5520 L	MED	521	BMS	7570	MED	732	CCJ	3700	CRJ	420
BMS	5600 C	MED	562	BMS	7571	MED	731	CCJ	4100	CRJ	401
BMS	5830	MED	580	BMS	7572	MED	733	CCJ	4290	CRJ	403
BMS	6105	MED	679	BMS	7643	MED	760	CCJ	4300	CRJ	402
BMS	6120 C	MED	609	BMS	7660	MED	761	CCJ	4905	CRJ	496
BMS	6131 C	MED	676	BMS	7931	MED	751	CCJ	4934	CRJ	495
BMS	6150	MED	606	BMS	7932	MED	750	CCJ	4940	CRJ	480
BMS	6166 C	MED	678	BOT	1010 C	BTY	181	CDA	3030	CIS	361
BMS	6173 C	MED	604	BOT	2011 C	BTY	203	CDA	3101	CIS	312
BMS	6175 C	MED	605	BOT	2710	BTY	424	CDA	4040	CIS	461
BMS	6176	MED	608	BOT	3153 C	BTY	342	CDA	4041	CIS	462
BMS	6182 C	MED	632	BOT	3163 C	BTY	346	CDA	4171	CIS	463
BMS	6185	MED	607	BOT	3173 C	BTY	345	CES	3103	CE	371
BMS	6230 C	MED	616	BOT	3303 C	BTY	380	CES	3123	CE	370
BMS	6231	MED	617	BOT	3503	BTY	310	CES	4034	CE	403
BMS	6260 C	MED	615	BOT	3503 L	BTY	311	CES	4607	CE	470
BMS	6305 C	MED	663	BOT	3800	BTY	375	CES	4704	CE	474
BMS	6310	MED	666	BOT	4053	BTY	472	CES	4705	CE	472
BMS	6311	MED	667	BOT	4283 C	BTY	441	CES	5305	CE	573
BMS	6312	MED	661	BOT	4905	BTY	496	CES	5325	CE	572
BMS	6312 L	MED	660	BOT	5225 C	BTY	532	CES	5715	CE	570
BMS	6314	MED	659	BOT	5405 C	BTY	522	CES	5726	CE	574
BMS	6321	MED	651	BOT	5435 C	BTY	521	CES	5801	CE	575
BMS	6322 C	MED	650	BOT	5485 C	BTY	523	CES	6106	CE	674
BMS	6323	MED	656	BOT	5505 C	BTY	515	CES	6108	CE	672
BMS	6324	MED	654	BOT	5625	BTY	500	CES	6136 L	CE	673
BMS	6330	MED	652	BOT	5695	BTY	502	CES	6146	CE	690
BMS	6330 L	MED	653	BOT	5725 C	BTY	542	CES	6207	CE	670
BMS	6331	MED	664	BOT	5755 C	BTY	524	CES	6516	CE	676
BMS	6350 C	MED	657	BOT	6256 C	BTY	655	CES	6526	CE	679
BMS	6351 C	MED	658	BOT	6256 C	MCS	635	CES	6551	CE	677
BMS	6352 C	MED	662	BOT	6316 C	BTY	631	CES	6616	CE	641
BMS	6353 C	MED	665	BOT	6326 C	BTY	632	CES	6706	CE	671
BMS	6354 C	MED	668	BOT	6346 C	BTY	622	CES	6716	CE	680
BMS	6360	MED	655	BOT	6446	BTY	621	CHI	1120	CH	133
BMS	6400 C	MED	670	BOT	6466 C	BTY	623	CHI	1121	CH	134
BMS	6420	MED	674	BOT	6476 C	BTY	626	CHI	1122	CH	135
BMS	6463	MED	671	BOT	6496 C	BTY	625	CHI	2201	CH	202
BMS	6466	MED	673	BOT	6516	BTY	617	CHI	2202	CH	203
BMS	6468	MED	672	BOT	6526	BTY	616	CHI	3500	CH	330
BMS	6510	MED	623	BOT	6566	BTY	615	CHM	1020	CY	101
BMS	6512	MED	636	BOT	6576	BTY	618	CHM	1021	CY	102
BMS	6514	MED	639	BOT	6646 C	BTY	602	CHM	2040	CY	201
BMS	6531	MED	622	BOT	6666	BTY	607	CHM	2041 C	CY	202
BMS	6532	MED	677	BOT	6716 C	BTY	642	CHM	2042 C	CY	203
BMS	6535	MED	628	BOT	6905	BTY	696	CHM	2043 C	CY	204
BMS	6536	MED	626	BOT	6910	BTY	697	CHM	2045 C	CY	211
BMS	6537	MED	637	BOT	6927	BTY	695	CHM	2046 C	CY	212
BMS	6560 C	MED	627	BOT	6936	BTY	692	CHM	2047 C	CY	213
BMS	6573	MED	619	BOT	6940	BTY	698	CHM	2050 C	CY	221
BMS	6574	MED	620	BOT	6951	BTY	605	CHM	2051 C	CY	222
BMS	6575	MED	621	BOT	6971	BTY	699	CHM	2052 C	CY	223
BMS	6576	MED	625	BOT	7980	BTY	799	CHM	2055 C	CY	231
BMS	6577	MED	629	BSC	2010 C	BIO	201	CHM	2056 C	CY	232
BMS	6578	MED	638	BSC	2011 C	BIO	202	CHM	3120 C	CY	331
BMS	6579	MED	624	BSC	2012 C	BIO	203	CHM	3200	CY	362
BMS	6601	MED	611	BSC	2930	CBS	251	CHM	3200 L	CY	363
BMS	6605	MED	641	BSC	3023	MED	351	CHM	3210	CY	381
BMS	6606	MED	648	BTE	3365	EDV	345	CHM	3210 L	CY	384
BMS	6612	MED	640	BTE	3367	EDV	346	CHM	3211	CY	382
BMS	6613	MED	643	BTE	4068	EDV	440	CHM	3211 L	CY	385

CHM	3215	CY	387	CHS	6120	CY	657	COP	4644	CIS	411
CHM	3216	CY	388	CIS	4020	CIS	482	COT	3001	CIS	331
CHM	3219	CY	389	CIS	4023	CIS	431	COT	4125	CIS	480
CHM	3400	CY	341	CIS	4025	CIS	433	COT	4320	CIS	455
CHM	3401	CY	342	CIS	4300	CIS	484	CPO	2002	PCL	207
CHM	3401 L	CY	343	CIS	4302	CIS	486	CPO	3034	PCL	326
CHM	4060	CY	481	CIS	4321	CIS	440	CPO	3083	PCL	327
CHM	4130	CY	433	CIS	4905	CIS	496	CPO	3134	PCL	341
CHM	4130 L	CY	434	CIS	4935	CIS	490	CPO	3204	PCL	343
CHM	4133	CY	435	CIS	4949	CEP	499	CPO	3303	PCL	340
CHM	4133 L	CY	436	CIS	4949	CIS	499	CPO	3513	PCL	342
CHM	4230	CY	465	CLA	2700	CS	202	CPO	4046	PCL	447
CHM	4230 L	CY	466	CLA	3501	CS	304	CPO	4103	PCL	445
CHM	4380	CY	475	CLA	4905	CS	496	CPO	4304	PCL	441
CHM	4410	CY	451	CLA	4935	CS	450	CPO	4306	PCL	442
CHM	4411	CY	452	CLP	4144	PSY	449	CPO	4614	PCL	444
CHM	4411 L	CY	454	CLP	6169	PSY	655	CPO	4633	PCL	443
CHM	4412	CY	453	CLP	6375	CLP	640	CPO	5065	PCL	506
CHM	4412 L	CY	455	CLP	6376	CLP	691	CPO	5105	PCL	508
CHM	4610	CY	411	CLP	6409	CLP	642	CPO	5145	PCL	511
CHM	4740 L	CY	410	CLP	6446	CLP	612	CPO	5305	PCL	541
CHM	4905	CY	496	CLP	6447	CLP	611	CPO	5306	PCL	542
CHM	4910	CY	498	CLP	6448	CLP	613	CPO	5636	PCL	505
CHM	5157	CY	533	CLP	6449	CLP	692	CPO	6007	PCL	660
CHM	5235	CY	565	CLP	6497	CLP	621	CPO	6107	PCL	662
CHM	5272	CY	561	CLP	6905	CLP	696	CPO	6207	PCL	668
CHM	5272	CHE	561	CLP	6910	CLP	697	CPO	6307	PCL	670
CHM	5300	CY	578	CLP	6940	CLP	698	CPO	6308	PCL	672
CHM	5413 L	CY	543	CLP	6943	CLP	651	CPO	6357	PCL	674
CHM	5511	CY	546	CLP	6947	CLP	652	CPO	6517	PCL	664
CHM	5511	CHE	546	CLP	6971	CLP	699	CPO	6637	PCL	666
CHM	5514	CY	545	CLP	7348	CLP	757	CRM	4121	CIS	435
CHM	5905	CY	596	CLP	7379	CLP	745	CRW	2221	EH	230
CHM	6140	CY	604	CLP	7407	CLP	744	CRW	2321	EH	229
CHM	6153	CY	632	CLP	7408	CLP	746	CRW	3230	EH	330
CHM	6154	CY	634	CLP	7427	CLP	714	CRW	3330	EH	329
CHM	6155	CY	635	CLP	7438	CLP	715	CRW	3530	EH	328
CHM	6158 L	CY	633	CLP	7468	CLP	759	CRW	4540	EH	428
CHM	6180	CY	639	CLP	7488	CLP	754	CRW	4905	EH	430
CHM	6190	CY	638	CLP	7936	CLP	723	CRW	4906	EH	429
CHM	6225	CY	661	CLP	7938	CLP	724	CRW	6250	EH	690
CHM	6226	CY	662	CLP	7942	CLP	753	CRW	6350	EH	691
CHM	6227	CY	663	CLP	7949	CLP	769	CRW	6550	EH	692
CHM	6242	CY	674	CLP	7980	CLP	799	CYP	6709	CLP	643
CHM	6251	CY	673	CLT	2370	CS	201	CYP	7308	CLP	755
CHM	6260	CY	671	CLT	2371	CS	203	CYP	7769	CLP	758
CHM	6270	CY	675	CLT	3230	CS	303	DAA	1100	PL	113
CHM	6271	CY	668	CLT	3291	CS	301	DAA	1300	PL	156
CHM	6271 L	CY	669	CLT	3340	CS	302	DAA	1310	PL	157
CHM	6381	CY	677	CLT	4905	CS	496	DAA	1340	PL	155
CHM	6390	CY	670	CNM	3100	CIS	351	DAA	1500	PL	129
CHM	6430	CY	641	CNM	3110	CIS	323	DAA	2101	THE	213
CHM	6440	CY	644	CNM	4141	CIS	420	DAA	2200	THE	333
CHM	6449	CY	659	COC	3110	CIS	311	DAA	3102	THE	336
CHM	6460	CY	642	COC	3400	CIS	300	DAA	3700	THE	334
CHM	6461	CY	643	COC	4400	ASC	404	DAA	3700	PHR	332
CHM	6470	CY	601	COM	3310	SCH	311	DAA	4103	THE	434
CHM	6471	CY	602	COM	4110	SCH	418	DAE	2320	PHR	232
CHM	6480	CY	655	COM	6121	SCH	618	DAE	2320	THE	232
CHM	6481	CY	647	COM	6300	SCH	600	DAE	2360	PHR	231
CHM	6482	CY	648	COM	6315	COM	621	DAE	3370	PHR	379
CHM	6483	CY	649	COM	6316	SCH	611	DAN	3500	THE	335
CHM	6490	CY	645	COM	6318	SCH	616	DAN	4103	THE	431
CHM	6510	CY	653	COM	6320	SCH	612	DAS	3211	DY	301
CHM	6512	CY	652	COM	6350	SCH	614	DAS	3214	DY	302
CHM	6513	CY	654	COM	6940	COM	698	DAS	4213	DY	401
CHM	6515	CY	658	COP	3110	CIS	302	DAS	4411	DY	405
CHM	6520	CY	629	COP	3111	CIS	305	DAS	4510	DY	407
CHM	6580	CY	650	COP	3120	CIS	306	DAS	4614	DY	455
CHM	6590	CY	640	COP	3121	CIS	385	DAS	4941	DY	400
CHM	6620	CY	612	COP	3122	CIS	386	DAS	6212 C	DY	605
CHM	6622 C	CY	610	COP	3134	CIS	380	DAS	6281	DY	601
CHM	6623	CY	616	COP	3202	CIS	307	DAS	6512 C	DY	607
CHM	6624	CY	615	COP	3210	CIS	303	DAS	6531	DY	604
CHM	6680	CY	617	COP	3212	CIS	350	DAS	6541	DY	606
CHM	6690	CY	618	COP	3530	CIS	321	DAS	6617	DY	610
CHM	6710	CY	606	COP	3550	CIS	322	DAS	6651	DY	613
CHM	6720	CY	608	COP	4112	CIS	405	DAS	6905	DY	696
CHM	6730	CY	607	COP	4150	CIS	403	DAS	6910	DY	697
CHM	6910	CY	697	COP	4151	CIS	404	DAS	6931	DY	603
CHM	6935	CY	605	COP	4226	CIS	406	DAS	6940	DY	698
CHM	6940	CY	698	COP	4300	CIS	453	DAS	6971	DY	699
CHM	6971	CY	699	COP	4400	CIS	401	DEN	5001	DEN	501
CHM	7485	CY	756	COP	4401	CIS	402	DEN	5002	DEN	502
CHM	7498	CY	757	COP	4540	CIS	470	DEN	5100	DEN	535
CHM	7980	CY	799	COP	4622	CIS	412	DEN	5110	DEN	540
CHS	5110	CY	550	COP	4640	CIS	471	DEN	5120	DEN	545
CHS	5110 L	CY	551	COP	4641	CIS	472	DEN	5130	DEN	546

TABLE 1

DEN	5180	DEN	508	DEP	6799	PSY	609	EAS	6241	ASE	641
DEN	5190	DEN	509	DEP	6936	PSY	604	EAS	6503	ASE	662
DEN	5200	DEN	506	DEP	7069	PSY	700	EAS	6504	ASE	663
DEN	5301	DEN	504	DEP	7118	PSY	704	EAS	6514	ASE	651
DEN	5303	DEN	503	DEP	7217	CLP	722	EAS	6720	ASE	681
DEN	5321	DEN	505	DEP	7608	PSY	706	EAS	6804 L	ASE	671
DEN	5501	DEN	507	DHE	4101	SY	471	EAS	6905	ASE	696
DEN	5503	DEN	517	DHE	4200	SY	470	EAS	6910	ASE	697
DEN	5505	DEN	527	DHE	6110	SY	672	EAS	6939	ASE	691
DEN	5508	DEN	537	DHE	6111	SY	673	EAS	6940	ASE	698
DEN	6210	DEN	609	DHE	6205	SY	670	EAS	6971	ASE	699
DEN	6211	DEN	620	DHE	6453	SY	674	EAS	7980	ASE	799
DEN	6212	DEN	622	DIE	3124	CCD	312	ECH	1001	CHE	100
DEN	6220	DEN	611	DIE	4125	FS	407	ECH	3023	CHE	301
DEN	6230	DEN	614	DIE	4126	CCD	407	ECH	3023 L	CHE	302
DEN	6240	DEN	608	DIE	4175	CCD	412	ECH	3101	CHE	333
DEN	6250	DEN	612	DIE	4244	FS	406	ECH	3109	CHE	331
DEN	6260	DEN	629	DIE	4245	CCD	406	ECH	3203	CHE	363
DEN	6270	DEN	615	DIE	4251	CCD	422	ECH	3204	CHE	365
DEN	6280	DEN	673	DIE	4275	CCD	411	ECH	3264 L	CHE	344
DEN	6290	DEN	674	DIE	4276	CCD	423	ECH	3303	CHE	311
DEN	6305	DEN	610	DIE	4316	CCD	420	ECH	3303 L	CHE	312
DEN	6311	DEN	613	DIE	4355	CCD	414	ECH	3783	CHE	300
DEN	6313	DEN	638	DIE	4377	CCD	421	ECH	3803	CHE	305
DEN	6315	DEN	649	DIE	4516	CCD	480	ECH	3804 L	CHE	376
DEN	6350	DEN	635	EAB	3002	PSY	320	ECH	3824	CHE	353
DEN	6351	DEN	650	EAB	4022 C	PSY	420	ECH	4012	CHE	445
DEN	6360	DEN	637	EAB	4033 L	PSY	424	ECH	4123	CHE	433
DEN	6511	DEN	670	EAB	4049	PSY	470	ECH	4144	CHE	431
DEN	6512	DEN	671	EAB	4184	PSY	422	ECH	4145	CHE	435
DEN	6513	DEN	672	EAB	4234 C	PSY	429	ECH	4221 L	CHE	492
DEN	7213	DEN	722	EAB	4509	PSY	469	ECH	4224 L	CHE	462
DEN	7214	DEN	721	EAB	4704	PSY	421	ECH	4264	CHE	441
DEN	7280	DEN	715	EAB	4724 C	PSY	423	ECH	4281	CHE	442
DEN	7323	DEN	724	EAB	4764	PSY	425	ECH	4323	CHE	411
DEN	7325	DEN	757	EAB	4933 C	PSY	428	ECH	4323 L	CHE	412
DEN	7352	DEN	751	EAB	5055	PSY	520	ECH	4403	CHE	463
DEN	7380	DEN	773	EAB	5436	PSY	576	ECH	4404 L	CHE	464
DEN	7390	DEN	774	EAB	5505	PSY	525	ECH	4504	CHE	421
DEN	7401	DEN	716	EAB	5935	PSY	522	ECH	4504 L	CHE	422
DEN	7403	DEN	718	EAB	6056	PSY	620	ECH	4524	CHE	423
DEN	7405	DEN	723	EAB	6098	PSY	683	ECH	4604	CHE	471
DEN	7421	DEN	717	EAB	6118	PSY	625	ECH	4605	CHE	476
DEN	7423	DEN	719	EAB	6707	PSY	621	ECH	4624	CHE	413
DEN	7425	DEN	727	EAB	6708	PSY	624	ECH	4644	CHE	473
DEN	7431	DEN	725	EAB	6719	PSY	623	ECH	4664	CHE	475
DEN	7433	DEN	726	EAB	6758	PSY	626	ECH	4704	CHE	452
DEN	7441	DEN	736	EAB	6937 C	PSY	622	ECH	4705	CHE	448
DEN	7451	DEN	741	EAB	7089	PSY	720	ECH	4724	CHE	449
DEN	7453	DEN	742	EAB	7729 C	PSY	721	ECH	4825	CHE	451
DEN	7514	DEN	770	EAB	7738	PSY	722	ECH	4842	CHE	402
DEN	7515	DEN	771	EAB	7739	PSY	723	ECH	4905	CHE	496
DEN	8281	DEN	815	EAB	7799	PSY	729	ECH	4934	CHE	481
DEN	8317	DEN	840	EAB	7888	PSY	728	ECH	4944	CHE	497
DEN	8408	DEN	831	EAS	3001	ASE	305	ECH	4949	CHE	499
DEN	8411	DEN	843	EAS	4002 L	ASE	404	ECH	5344 L	CHE	512
DEN	8413	DEN	844	EAS	4105	ASE	400	ECH	5708	CHE	577
DEN	8415	DEN	845	EAS	4106	ASE	401	ECH	6126	CHE	631
DEN	8417	DEN	846	EAS	4112	ASE	402	ECH	6146	CHE	632
DEN	8419	DEN	847	EAS	4122	ASE	403	ECH	6147	CHE	633
DEN	8428	DEN	839	EAS	4200	ASE	441	ECH	6159	CHE	683
DEN	8435	DEN	832	EAS	4201 L	ASE	444	ECH	6206	CHE	643
DEN	8438	DEN	833	EAS	4210	ASE	442	ECH	6207	CHE	645
DEN	8443	DEN	834	EAS	4220	ASE	443	ECH	6208	CHE	646
DEN	8445	DEN	853	EAS	4230	ASE	451	ECH	6226	CHE	663
DEN	8448	DEN	852	EAS	4240	ASE	445	ECH	6261	CHE	640
DEN	8461	DEN	854	EAS	4300	ASE	461	ECH	6263	CHE	644
DEN	8463	DEN	855	EAS	4310	ASE	462	ECH	6269	CHE	682
DEN	8465	DEN	856	EAS	4400	ASE	420	ECH	6285	CHE	641
DEN	8470	DEN	830	EAS	4412	ASE	470	ECH	6286	CHE	642
DEN	8475	DEN	858	EAS	4510	ASE	494	ECH	6296	CHE	626
DEN	8480	DEN	873	EAS	4602	ASE	471	ECH	6306	CHE	610
DEN	8490	DEN	874	EAS	4700	ASE	485	ECH	6307	CHE	611
DEN	8516	DEN	870	EAS	4710	ASE	486	ECH	6326	CHE	614
DEN	8517	DEN	871	EAS	4803	ASE	475	ECH	6328	CHE	681
DEN	8518	DEN	872	EAS	4905	ASE	496	ECH	6406	CHE	662
DEP	3003	PSY	303	EAS	4933	ASE	490	ECH	6413	CHE	665
DEP	4115	PSY	402	EAS	4939	ASE	498	ECH	6428	CHE	685
DEP	4204	PSY	404	EAS	4949	CEP	499	ECH	6506	CHE	621
DEP	4305	PSY	403	EAS	4949	ASE	499	ECH	6526	CHE	622
DEP	4404	PSY	409	EAS	6135	ASE	611	ECH	6606	CHE	676
DEP	4704	PSY	405	EAS	6136	ASE	612	ECH	6626	CHE	615
DEP	5049	PSY	500	EAS	6137	ASE	613	ECH	6627	CHE	616
DEP	6059	PSY	607	EAS	6141	ASE	601	ECH	6646	CHE	672
DEP	6099	PSY	685	EAS	6142	ASE	602	ECH	6647	CHE	673
DEP	6216	CLP	622	EAS	6221	ASE	631	ECH	6666	CHE	617
DEP	6409	PSY	605	EAS	6222	ASE	632	ECH	6688	CHE	686
DEP	6796	PSY	608	EAS	6223	ASE	633	ECH	6706	CHE	647

ECH	6707	CHE	671
ECH	6726	CHE	678
ECH	6727	CHE	679
ECH	6746	CHE	677
ECH	6766	CHE	648
ECH	6826	CHE	650
ECH	6827	CHE	651
ECH	6844	CHE	602
ECH	6845	CHE	603
ECH	6846	CHE	604
ECH	6847	CHE	605
ECH	6848	CHE	606
ECH	6849	CHE	687
ECH	690S	CHE	696
ECH	6910	CHE	697
ECH	6926	CHE	601
ECH	6936	CHE	680
ECH	6937	CHE	690
ECH	6939	CHE	692
ECH	6940	CHE	698
ECH	6971	CHE	699
ECH	7938	CHE	790
ECH	7980	CHE	799
ECI	2122	CE	290
ECI	3213	CE	320
ECI	3403	CE	340
ECI	351S	CE	300
ECI	4041	CE	493
ECI	4131	CE	405
ECI	4137	CE	404
ECI	4145	CE	401
ECI	4151	CE	497
ECI	4152	CE	491
ECI	4214	CE	420
ECI	4305	CE	461
ECI	4314	CE	460
ECI	4324	CE	462
ECI	4514	CE	400
ECI	4905	CE	496
ECI	4935	CE	490
ECI	4949	CEP	499
ECI	4949	CE	499
ECI	5045	CE	590
ECI	5124	CE	591
ECI	5125	CE	501
ECI	S147	CE	S02
ECI	S157	CE	504
ECI	5166	CE	505
ECI	5186	CE	530
ECI	S225	CE	520
ECI	S235	CE	S22
ECI	5265	CE	525
ECI	5317	CE	560
ECI	5325	CE	562
ECI	5335	CE	561
ECI	5625	CE	521
ECI	6153	CE	602
ECI	6154	CE	603
ECI	6223	CE	629
ECI	6224	CE	630
ECI	6227	CE	624
ECI	6228	CE	625
ECI	6233	CE	621
ECI	6234	CE	628
ECI	6236	CE	622
ECI	6237	CE	623
ECI	6238	CE	627
ECI	6316	CE	660
ECI	6326	CE	661
ECI	6346	CE	663
ECI	6356	CE	665
ECI	6416	CE	642
ECI	6426	CE	640
ECI	6436	CE	662
ECI	657S	CE	681
ECI	6576	CE	682
ECI	6616	CE	620
ECI	6905	CE	696
ECI	6910	CE	697
ECI	6936	CE	691
ECI	6940	CE	698
ECI	6971	CE	699
ECI	6974	CE	694
ECI	7980	CE	799
ECM	4949	CEP	499
ECM	6260	I5E	654
ECO	2000	ES	200
ECO	2013	ES	201
ECO	2023	ES	202
ECO	2620	ES	211
ECO	3100	ES	302
ECO	3213	ES	321
ECO	32S1	ES	301
ECO	3411	ES	361
ECO	3703	ES	341
ECO	4101	ES	402
ECO	420S	ES	401
ECO	4303	ES	405
ECO	4431	ES	469
ECO	4504	ES	431
ECO	4622	ES	414
ECO	4633	ES	410
ECO	4634	ES	411
ECO	4713	ES	444
ECO	4905	ES	496
ECO	4934	ES	498
ECO	4935	ES	400
ECO	5111	ES	502
ECO	S204	ES	501
ECO	S227	ES	S21
ECO	5404	ES	560
ECO	5424	ES	S61
ECO	S42S	ES	S62
ECO	554S	ES	S31
ECO	5556	ES	535
ECO	5566	ES	536
ECO	S716	ES	543
ECO	6115	ES	692
ECO	6116	ES	602
ECO	6206	ES	601
ECO	6216	ES	621
ECO	6236	ES	625
ECO	6257	ES	633
ECO	6266	ES	622
ECO	6305	ES	60S
ECO	6306	ES	606
ECO	6315	ES	608
ECO	6405	ES	665
ECO	6406	ES	666
ECO	6407	ES	660
ECO	6426	ES	661
ECO	6427	ES	662
ECO	6428	ES	663
ECO	6433	ES	616
ECO	6435	ES	669
ECO	6516	ES	632
ECO	6526	ES	635
ECO	6536	ES	634
ECO	6617	ES	614
ECO	6626	ES	610
ECO	6627	ES	611
ECO	6706	ES	641
ECO	6717	ES	644
ECO	6910	ES	697
ECO	6940	ES	698
ECO	6971	ES	699
ECO	7118	ES	702
ECO	7208	ES	701
ECO	7938	ES	730
ECO	7980	ES	799
ECP	3000	ES	390
ECP	3141	ES	377
ECP	3203	ES	372
ECP	3302	ES	331
ECP	3423	ES	354
ECP	3433	ES	351
ECP	4143	ES	415
ECP	4403	ES	455
ECP	4602	ES	481
ECP	S106	ES	S8S
ECP	5205	ES	572
ECP	5606	ES	S86
ECP	S614	ES	S81
ECP	5624	ES	S80
ECP	6207	ES	674
ECP	6216	ES	672
ECP	6225	ES	673
ECP	640S	ES	655
ECP	6407	ES	657
ECP	6426	ES	654
ECP	6536	ES	675
ECP	6537	ES	676
ECP	6615	ES	681
ECP	6625	ES	680
ECP	6705	ES	61S
ECP	6905	ES	696
ECS	3403	ES	345
ECS	4003	ES	449
ECS	4013	ES	418
ECS	4203	ES	448
ECS	4334	ES	413
ECS	4334	HY	413
ECS	5005	ES	549
ECS	5115	ES	547
ECS	5425	ES	545
ECS	6006	ES	649
ECS	6015	ES	617
ECS	6025	ES	618
ECS	6405	ES	645
ECS	6415	ES	646
ECS	6426	ES	647
EDA	6061	EDA	600
EDA	6105	EDA	641
EDA	6192	EDA	631
EDA	6195	EDA	632
EDA	6201	EDA	605
EDA	6203	EDA	608
EDA	6222	EDA	607
EDA	6225	EDA	617
EDA	6232	EDA	604
EDA	6242	EDA	603
EDA	6271	EDA	640
EDA	6306	EDA	616
EDA	6510	EDA	601
EDA	6530	EDA	602
EDA	6905	EDA	696
EDA	6910	EDA	697
EDA	6931	EDA	690
EDA	6935	EDA	609
EDA	6940	EDA	698
EDA	6948	EDA	606
EDA	7103	EDA	706
EDA	7205	EDA	700
EDA	7236	EDA	705
EDA	7244	EDA	703
EDA	7260	EDA	702
EDA	7550	EDA	704
EDA	7565	EDA	710
EDA	794S	EDA	730
EDA	7980	EDA	799
EDA	7990	EDA	707
EDE	3800	EDE	311
EDE	3804	EDE	355
EDE	4203	EDE	400
EDE	4905	EDE	496
EDE	4943	EDE	405
EDE	6205	EDE	600
EDE	6225	EDE	601
EDE	6541	EDE	608
EDE	6905	EDE	696
EDE	6910	EDE	697
EDE	6932	EDE	690
EDE	6940	EDE	698
EDE	6948	EDE	602
EDE	7247	EDE	700
EDE	7248	EDE	701
EDE	7415	EDE	702
EDF	3110	EDF	345
EDF	3122	EDF	341
EDF	3135	EDF	342
EDF	3514	EDF	300
EDF	3604	EDF	320
EDF	3935	EDF	390
EDF	4114	EDF	440
EDF	4210	EDF	442
EDF	4430	EDF	450
EDF	4542	EDF	410
EDF	4710	EDF	431
EDF	4780	EDF	433
EDF	4905	EDF	496
EDF	521S	EDF	543
EDF	6111 L	EDF	644
EDF	6112 L	EDF	64S
EDF	6113	EDF	640
EDF	6118	EDF	647
EDF	6119	EDF	648
EDF	6211	EDF	646
EDF	6215	EDF	643
EDF	6218	EDF	642
EDF	63S5	EDF	641
EDF	6401	EDF	660
EDF	6403	EDF	664
EDF	6436	EDF	650
EDF	6481	EDF	663

TABLE 1

EDF	6487	EDF	665
EDF	6520	EDF	600
EDF	6525	EDF	601
EDF	6544	EDF	610
EDF	6606	EDF	620
EDF	6630	EDF	625
EDF	6712	EDF	631
EDF	6720	EDF	632
EDF	6905	EDF	696
EDF	6910	EDF	697
EDF	6933	EDF	666
EDF	6938	EDF	690
EDF	6940	EDF	662
EDF	6941	EDF	698
EDF	6943	EDF	649
EDF	6971	EDF	699
EDF	7146	EDF	740
EDF	7149	EDF	741
EDF	7198	EDF	747
EDF	7229	EDF	743
EDF	7405	EDF	764
EDF	7432	EDF	750
EDF	7486	EDF	760
EDF	7491	EDF	768
EDF	7555	EDF	710
EDF	7573	EDF	712
EDF	7575	EDF	711
EDF	7584	EDF	701
EDF	7608	EDF	720
EDF	7639	EDF	725
EDF	7931	EDF	765
EDF	7932	EDF	766
EDF	7934	EDF	780
EDF	7980	EDF	799
EDG	4905	ED	496
EDG	5940	ED	501
EDG	5940	ED	500
EDG	6046	ED	605
EDG	6250	ED	600
EDG	6285	ED	635
EDG	6691	ED	648
EDG	6712	ED	620
EDG	6905	ED	696
EDG	6910	ED	697
EDG	6931	ED	690
EDG	6940	ED	698
EDG	6941	ED	682
EDG	6971	ED	699
EDG	7222	ED	701
EDG	7235	ED	740
EDG	7361	ED	700
EDG	7391	ED	731
EDG	7665	ED	752
EDG	7666	ED	753
EDG	7699	ED	744
EDG	7795	ED	720
EDG	7941	ED	730
EDG	7947	ED	741
EDG	7948	ED	742
EDG	7980	ED	799
EDH	6053	ED	603
EDH	6066	ED	640
EDH	6305	ED	643
EDH	6946	ED	642
EDH	6947	ED	641
EDH	7937	ED	743
EDM	3021	ED5	303
EDM	6005	ED	601
EDM	6215	EDS	601
EDM	6945	ED	604
EDM	7935	ED	702
EDS	6100	ED	634
EDS	6140	ED	633
EDS	6351	EDE	635
EDS	6925	ED	670
EEC	5945	EDE	503
EEC	5945	EDE	504
EEC	6051	EDE	603
EEC	6205	EDE	604
EEC	6405	EDE	605
EEC	7932	EDE	704
EEC	7932	EDE	703
EED	4011	EDH	419
EED	6221	EDH	619
EED	6225	EDH	620
EED	6241	EDH	621
EED	6245	EDH	622
EED	6943	EDH	671
EED	7930	EDH	720
EED	7936	EDH	721
EEL	3001	EE	301
EEL	3001 L	EE	320
EEL	3003	EE	302
EEL	3111	EE	331
EEL	3112	EE	332
EEL	3135	EE	333
EEL	3211	EE	381
EEL	3212	EE	382
EEL	3218	EE	380
EEL	3303	EE	321
EEL	3303 L	EE	340
EEL	3304	EE	322
EEL	3368	EE	304
EEL	3368 L	EE	305
EEL	3396	EE	325
EEL	3472	EE	353
EEL	3473	EE	353
EEL	3751	EE	361
EEL	4201 L	EE	430
EEL	4204	EE	481
EEL	4205	EE	482
EEL	4213	EE	483
EEL	4214	EE	484
EEL	4215	EE	485
EEL	4304 L	EE	420
EEL	4310 C	EE	425
EEL	4331 C	EE	427
EEL	4373	EE	422
EEL	4373 L	EE	423
EEL	4431	EE	452
EEL	4436	EE	456
EEL	4436 L	EE	455
EEL	4440 C	EE	431
EEL	4461	EE	451
EEL	4479	EE	458
EEL	4514	EE	441
EEL	4514 L	EE	440
EEL	4516	EE	443
EEL	4657	EE	474
EEL	4712 C	EE	461
EEL	4713 C	EE	462
EEL	4714 C	EE	463
EEL	4905	EE	496
EEL	4914 L	EE	450
EEL	4930 C	EE	492
EEL	4941	EE	491
EEL	4949	CEP	499
EEL	4949	EE	499
EEL	5134	EE	571
EEL	5161	EE	533
EEL	5182	EE	570
EEL	5370	EE	526
EEL	5485	EE	558
EEL	5562	EE	568
EEL	5718	EE	541
EEL	5719 C	EE	549
EEL	5761	EE	564
EEL	5762	EE	567
EEL	5768	EE	562
EEL	5769	EE	566
EEL	5821	EE	565
EEL	5905	EE	596
EEL	5934	EE	592
EEL	6156	EE	630
EEL	6157	EE	631
EEL	6162	EE	633
EEL	6170	EE	600
EEL	6171	EE	601
EEL	6172	EE	602
EEL	6264	EE	680
EEL	6265	EE	681
EEL	6266	EE	682
EEL	6267	EE	685
EEL	6311	EE	622
EEL	6312	EE	623
EEL	6313	EE	624
EEL	6381	EE	625
EEL	6382	EE	617
EEL	6383	EE	618
EEL	6384	EE	619
EEL	6388	EE	628
EEL	6397 C	EE	620
EEL	6398	EE	621
EEL	6399	EE	626
EEL	6442	EE	611
EEL	6443	EE	613
EEL	6444	EE	614
EEL	6447 L	EGC	677
EEL	6450	EE	653
EEL	6451	EGC	671
EEL	6452	EGC	672
EEL	6452 L	EGC	675
EEL	6486	EE	651
EEL	6487	EE	652
EEL	6503	EE	644
EEL	6505	EE	649
EEL	6509	EE	646
EEL	6524	EE	645
EEL	6534	EE	641
EEL	6535	EE	642
EEL	6544	EE	640
EEL	6614	EE	670
EEL	6615	EE	671
EEL	6616	EE	672
EEL	6622	EE	679
EEL	6733	EE	661
EEL	6741 C	EE	667
EEL	6767	EE	662
EEL	6824	EE	660
EEL	6825	EE	664
EEL	6826	EE	669
EEL	6843	EE	663
EEL	6905	EE	696
EEL	6910	EE	697
EEL	6932	EE	695
EEL	6935	EE	692
EEL	6971	EE	699
EEL	7827	EE	764
EEL	7980	EE	799
EES	2001	ENV	201
EES	3008	ENV	360
EES	4004	ENV	401
EES	4101	ENV	420
EES	4201	ENV	434
EES	4241	ENV	431
EES	4401	ENV	422
EES	5007	ENV	560
EES	5105	ENV	520
EES	5245	ENV	531
EES	5306	ENV	561
EES	6006	ENV	668
EES	6036	ENV	652
EES	6106	ENV	628
EES	6106	MCS	628
EES	6136	ENV	627
EES	6166	ENV	626
EES	6207	ENV	630
EES	6208	ENV	632
EES	6209	ENV	633
EES	6246	ENV	631
EES	6355	ENV	618
EES	6356	ENV	617
EES	6506	ENV	650
EES	6936	ENV	624
EEX	3010	EDH	300
EEX	3040	EDH	301
EEX	3222	EDH	311
EEX	4141	EDS	414
EEX	4861	EDH	405
EEX	4905	EDH	496
EEX	6045	EDH	615
EEX	6051	EDH	600
EEX	6059	EDH	605
EEX	6248	EDH	606
EEX	6511	EDA	620
EEX	6521	EDH	631
EEX	6863	EDH	610
EEX	6883	EDH	665
EEX	6905	EDH	696
EEX	6910	EDH	697
EEX	6936	EDH	690
EEX	6940	EDH	698
EEX	7535	EDA	720
EEX	7865	EDH	704
EEX	7930	EDH	700
EEX	7932	EDH	702
EEX	7934	EDH	703
EEX	7945	EDA	721
EEX	7980	EDH	799
EGC	3053	EDC	301
EGC	4033	EDC	450
EGC	5065	RC	500
EGC	5166	RC	501
EGC	6005	EDC	610

EGC	6045	EDC	622
EGC	6054	EDC	660
EGC	6055	EDC	640
EGC	6057	EDC	641
EGC	6225	EDC	613
EGC	6317	EDC	611
EGC	6374	RC	602
EGC	6376	RC	603
EGC	6405	EDC	612
EGC	6416	EDC	614
EGC	6426	EDC	658
EGC	6438	EDC	626
EGC	6447	EDC	620
EGC	6461	EDC	628
EGC	6463	EDC	629
EGC	6465	EDC	633
EGC	6467	EDC	627
EGC	6493	RC	604
EGC	6505	EDC	623
EGC	6545	EDC	624
EGC	6606	EDC	618
EGC	6675	RC	607
EGC	6726	EDC	621
EGC	6767	RC	644
EGC	6850	RC	660
EGC	6851	RC	661
EGC	6885	RC	680
EGC	6905	EDC	696
EGC	6905	RC	696
EGC	6910	EDC	697
EGC	6910	RC	697
EGC	6934	EDC	659
EGC	6934	RC	605
EGC	6938	EDC	690
EGC	6940	EDC	698
EGC	6940	RC	698
EGC	6971	EDC	699
EGC	7056	EDC	740
EGC	7318	EDC	713
EGC	7329	EDC	701
EGC	7446	EDC	710
EGC	7485	EDC	723
EGC	7585	EDC	711
EGC	7616	EDC	722
EGC	7706	EDC	721
EGC	7840	EDC	712
EGC	7852	EDC	714
EGC	7890	EDC	716
EGC	7890	EDC	718
EGC	7890	EDC	717
EGC	7891	EDC	708
EGC	7892	EDC	709
EGC	7893	EDC	719
EGC	7937	EDC	715
EGC	7980	EDC	799
EGI	6051	EDH	603
EGI	6245	EDH	604
EGM	3311	ESM	330
EGM	3400	ESM	302
EGM	3511	ESM	301
EGM	3520	ESM	303
EGM	4000	ESM	401
EGM	4001	ESM	402
EGM	4008	ESM	480
EGM	4009	ESM	481
EGM	4200	ESM	420
EGM	4312	ESM	431
EGM	4313	ESM	432
EGM	4314	ESM	433
EGM	4560	ESM	460
EGM	4901	ESM	498
EGM	4905	ESM	496
EGM	4910 L	ESM	411
EGM	4949	CEP	499
EGM	4949	ESM	499
EGM	5005	ESM	510
EGM	5111 L	ESM	549
EGM	5421	ESM	527
EGM	5430	ESM	536
EGM	5533	ESM	533
EGM	5550	ESM	534
EGM	5816	EGC	541
EGM	5905	ESM	596
EGM	6215	ESM	621
EGM	6225	ESM	622
EGM	6235	ESM	623
EGM	6236	ESM	624
EGM	6245	ESM	625
EGM	6250	EGC	640
EGM	6321	EGC	633
EGM	6322	EGC	634
EGM	6323	EGC	635
EGM	6324	EGC	636
EGM	6325	EGC	637
EGM	6341	ESM	636
EGM	6342	ESM	637
EGM	6351	ESM	638
EGM	6422	ESM	628
EGM	6444	ESM	644
EGM	6445	ESM	645
EGM	6460	ESM	646
EGM	6476	ESM	676
EGM	6478	ESM	679
EGM	6551	ESM	655
EGM	6584	ESM	605
EGM	6611	ESM	601
EGM	6612	ESM	602
EGM	6613	ESM	603
EGM	6652	ESM	652
EGM	6653	ESM	653
EGM	6654	ESM	654
EGM	6670	ESM	670
EGM	6671	ESM	671
EGM	6682	ESM	682
EGM	6683	ESM	683
EGM	6684	ESM	684
EGM	6716	ESM	673
EGM	6717	ESM	635
EGM	6718	ESM	675
EGM	6726	ESM	674
EGM	6736	ESM	667
EGM	6811	EGC	601
EGM	6812	EGC	602
EGM	6813	EGC	603
EGM	6835	EGC	604
EGM	6845	EGC	605
EGM	6905	ESM	696
EGM	6910	ESM	697
EGM	6934	ESM	692
EGM	6936	ESM	690
EGM	6940	ESM	698
EGM	6971	ESM	699
EGM	7980	ESM	799
EGN	1002	EGC	180
EGN	1006	EGC	183
EGN	1110 C	EGR	183
EGN	1111 C	EGR	193
EGN	1123	EGR	196
EGN	1126	EGR	194
EGN	1130	EGR	195
EGN	2845	EGC	210
EGN	3023	EGC	301
EGN	3080	EGC	300
EGN	3082	EGC	304
EGN	3353	EGC	311
EGN	4036	EGC	400
EGN	4114	EGR	421
EGN	4730	EGC	450
EGN	4731	EGC	451
EGN	4732 L	EGC	452
EGN	4735	EGC	455
EGN	4822	CE	492
EGN	4834	ASC	475
EGN	6740	EGC	621
EGN	6741	EGC	622
EGN	6742	EGC	623
EIA	3280 C	SCA	340
EIA	3291 C	SCA	320
EIN	3114	ISE	350
EIN	3304	ISE	300
EIN	3314 L	ISE	330
EIN	3373	ISE	331
EIN	4105	ISE	441
EIN	4212	ISE	442
EIN	4243	ISE	440
EIN	4333	ISE	432
EIN	4335	ISE	434
EIN	4344	ISE	410
EIN	4354	ISE	420
EIN	4355	ISE	421
EIN	4365	ISE	433
EIN	4905	ISE	496
EIN	4937	ISE	490
EIN	4944	ISE	497
EIN	5244	ISE	540
EIN	6115	ISE	653
EIN	6246 L	ISE	640
EIN	6247	ISE	642
EIN	6249	ISE	641
EIN	6318	ISE	631
EIN	6338	ISE	630
EIN	6348	ISE	610
EIN	6357	ISE	621
EIN	6358	ISE	622
EIN	6367	ISE	632
EIN	6388	ISE	661
EIN	6508	ISE	635
EIN	6509	ISE	636
EIN	6905	ISE	696
EIN	6910	ISE	697
EIN	6918	ISE	690
EIN	6939	ISE	679
EIN	6940	ISE	698
EIN	6971	ISE	699
EIN	7933	ISE	797
EIN	7980	ISE	799
ELD	6111	EDH	664
ELD	6112	EDH	661
ELD	6211	EDH	663
ELD	6213	EDH	669
ELD	6241	EDH	667
ELD	6936	EDH	662
ELD	6937	EDH	668
ELD	6944	EDH	674
ELD	6947	EDH	607
ELD	7938	EDH	750
ELR	4116	EE	486
ELR	4371	EE	428
ELR	4372	EE	429
ELR	5112	EE	514
ELR	5210	EE	516
ELR	6225	EE	615
ELR	6226	EE	616
ELR	6940	EE	698
EMA	1020	MSE	100
EMA	3010 L	MSE	300
EMA	3012 L	MSE	301
EMA	3040 L	MSE	380
EMA	3050	MSE	303
EMA	3066	MSE	304
EMA	3080	MSE	350
EMA	3123	MSE	302
EMA	3413	MSE	310
EMA	3513	MSE	360
EMA	3622 L	MSE	390
EMA	4121	MSE	401
EMA	4122	MSE	402
EMA	4124	MSE	420
EMA	4125	MSE	421
EMA	4144	MSE	481
EMA	4145	MSE	482
EMA	4223 L	MSE	440
EMA	4224	MSE	441
EMA	4314	MSE	452
EMA	4324	MSE	453
EMA	4444	MSE	483
EMA	4522 L	MSE	491
EMA	4524 L	MSE	461
EMA	4623	MSE	450
EMA	4624	MSE	451
EMA	4632 L	MSE	492
EMA	4634 L	MSE	442
EMA	4643 L	MSE	480
EMA	4645 C	MSE	484
EMA	4714	MSE	422
EMA	4905	MSE	496
EMA	4913	MSE	493
EMA	4914	MSE	494
EMA	4935	MSE	498
EMA	4940	MSE	471
EMA	4949	MSE	499
EMA	6106	MSE	601
EMA	6107	MSE	602
EMA	6110	MSE	610
EMA	6111	MSE	611
EMA	6112	MSE	612
EMA	6126	MSE	620
EMA	6127	MSE	621
EMA	6128	MSE	622
EMA	6136	MSE	625
EMA	6137	MSE	630
EMA	6146	MSE	680
EMA	6147	MSE	682
EMA	6226	MSE	640

TABLE 1

EMA	6227	MSE	641
EMA	6316	MSE	650
EMA	6326	MSE	651
EMA	6436	MSE	615
EMA	6437	MSE	617
EMA	6446	MSE	681
EMA	6448	MSE	683
EMA	6507 C	MSE	664
EMA	6508	MSE	667
EMA	6514 L	MSE	665
EMA	6516	MSE	660
EMA	6517	MSE	661
EMA	6518 L	MSE	662
EMA	6519 L	MSE	663
EMA	6580	MSE	685
EMA	6581	MSE	686
EMA	6905	MSE	696
EMA	6910	MSE	697
EMA	6936	MSE	670
EMA	6937	MSE	671
EMA	6938	MSE	675
EMA	6940	MSE	698
EMA	6971	MSE	699
EMA	7008	MSE	701
EMA	7980	MSE	799
EME	4102	ED	418
EME	4201	ED	419
EME	5506	BR	518
EME	6052	ED	611
EME	6105	ED	616
EME	6205	ED	618
EME	6207	ED	612
EME	6325	ED	614
EME	6405	ED	623
EME	6505	ED	615
EME	6606	ED	622
EME	6716	ED	613
EME	6805	ED	617
EME	6807	ED	619
EME	6945	ED	621
EME	7938	ED	711
EML	2002	ME	280
EML	3005	ME	301
EML	3100	ME	360
EML	3101 L	ME	362
EML	3102 L	ME	361
EML	3202	ME	380
EML	3260	ME	381
EML	3301 C	ME	320
EML	3321	ME	382
EML	4140	ME	430
EML	4141	ME	431
EML	4220 C	ME	480
EML	4263	ME	439
EML	4411	ME	461
EML	4411 L	ME	462
EML	4414	ME	463
EML	4414 L	ME	464
EML	4416	ME	470
EML	4419	ME	460
EML	4450	ME	467
EML	4500	ME	482
EML	4501	ME	483
EML	4502	ME	484
EML	4522	ME	445
EML	4600	ME	469
EML	4601	ME	465
EML	4601 L	ME	466
EML	4709	ME	450
EML	4905	ME	496
MEL	4920	ME	401
EML	4926	ME	468
EML	4936	ME	402
EML	4945	ME	497
EML	4949	ME	499
EML	5104	ME	561
EML	5105	ME	560
EML	5152	ME	555
EML	5223	ME	581
EML	5224	ME	540
EML	5273	ME	580
EML	5311	ME	520
EML	5504	ME	593
EML	5505	ME	594
EML	5515	ME	591
EML	5526	ME	535
EML	5527	ME	589
EML	5605	ME	577
EML	5714	ME	550
EML	6103	ME	661
EML	6108	ME	660
EML	6131	ME	664
EML	6132	ME	665
EML	6153	ME	659
EML	6154	ME	655
EML	6155	ME	656
EML	6156	ME	658
EML	6157	ME	657
EML	6159	ME	651
EML	6254	ME	641
EML	6272	ME	680
EML	6274	ME	683
EML	6275	ME	684
EML	6276	ME	685
EML	6277	ME	686
EML	6278	ME	639
EML	6306 L	ME	620
EML	6417	ME	666
EML	6418	ME	667
EML	6452	ME	663
EML	6506	ME	630
EML	6507	ME	631
EML	6508	ME	687
EML	6606	ME	675
EML	6607	ME	676
EML	6715	ME	650
EML	6716	ME	652
EML	6717	ME	653
EML	6718	ME	654
EML	6905	ME	696
EML	6906	ME	692
EML	6910	ME	696
EML	6911	ME	690
EML	6935	ME	695
EML	6940	ME	698
EML	6971	ME	699
EML	7980	ME	799
EMR	3011	EDH	310
EMR	4201	EDH	400
EMR	4202	EDH	401
EMR	4204	EDH	403
EMR	4214	EDH	404
EMR	4230	EDH	402
EMR	4330	EDH	406
EMR	6361	EDH	601
EMR	6801	EDH	670
EMR	7936	EDH	701
ENC	1017 L	EH	110
ENC	1102	EH	111
ENC	1256	EH	124
ENC	1418	EH	112
ENC	3343	EH	302
ENC	3351	EH	303
ENC	3464	EH	301
ENC	3532	EH	391
ENC	4356	EH	403
ENC	4542	EH	404
ENG	1200	EH	121
ENG	1400	EH	122
ENG	1710	EH	123
ENG	2120	EH	281
ENG	2540	EH	203
ENG	2932	EH	291
ENG	2932	EH	293
ENG	2932	EH	292
ENG	3132	EH	350
ENG	3135	EH	355
ENG	3136	EH	356
ENG	3203	EH	321
ENG	3221	EH	371
ENG	3222	EH	372
ENG	3315	EH	317
ENG	3321	EH	315
ENG	3325	EH	316
ENG	3410	EH	322
ENG	3462	EH	311
ENG	3463	EH	312
ENG	3500	EH	304
ENG	3551	EH	305
ENG	3714	EH	323
ENG	3812	EH	381
ENG	4105	EH	484
ENG	4141	EH	495
ENG	4161	EH	491
ENG	4165	EH	492
ENG	4424	EH	443
ENG	4470	EH	414
ENG	4471	EH	415
ENG	4511	EH	401
ENG	4745	EH	471
ENG	4748	EH	417
ENG	4905	EH	496
ENG	4936	EH	485
ENG	5905	EH	596
ENG	6063	EH	600
ENG	6143	EH	613
ENG	6144	EH	675
ENG	6148	EH	633
ENG	6154	EH	614
ENG	6217	EH	677
ENG	6437	EH	679
ENG	6571	LIN	656
ENG	6595	EH	619
ENG	6718	EH	684
ENG	6755	EH	678
ENG	6839	EH	666
ENG	6905	EH	696
ENG	6910	EH	697
ENG	6974	EH	699
ENG	7066	EH	700
ENG	7119	EH	780
ENG	7147	EH	775
ENG	7938	EH	790
ENG	7980	EH	799
ENL	2031	EH	221
ENL	2033	EH	220
ENL	2034	EH	222
ENL	2042	EH	223
ENL	2130	EH	200
ENL	3451	EH	310
ENL	4111	EH	421
ENL	4135	EH	431
ENL	4136	EH	432
ENL	4300	EH	420
ENL	4311	EH	423
ENL	4321	EH	438
ENL	4331	EH	436
ENL	4341	EH	437
ENL	4351	EH	441
ENL	4352	EH	442
ENL	4403	EH	451
ENL	4404	EH	452
ENL	4415	EH	462
ENL	6304	EH	620
ENL	6314	EH	626
ENL	6323	EH	630
ENL	6394	EH	640
ENL	6425	EH	644
ENL	6447	EH	650
ENL	7149	EH	735
ENL	7317	EH	720
ENL	7326	EH	730
ENL	7393	EH	740
ENL	7427	EH	745
ENL	7448	EH	750
ENU	3002	NES	300
ENU	3012	NES	301
ENU	4101	NES	400
ENU	4103	NES	401
ENU	4104	NES	402
ENU	4134	NES	405
ENU	4144	NES	403
ENU	4192	NES	451
ENU	4304	NES	430
ENU	4405	NES	432
ENU	4505 L	NES	404
ENU	4601	NES	431
ENU	4605	NES	435
ENU	4612	NES	440
ENU	4704	NES	470
ENU	4905	NES	496
ENU	4944	NES	499
ENU	4949	CEP	499
ENU	5005	NES	500
ENU	5176 L	NES	570
ENU	5186	NES	555
ENU	5195	NES	551
ENU	5306	NES	585
ENU	5414	NES	533
ENU	5615 L	NES	540
ENU	5625	NES	580
ENU	5626	NES	584
ENU	6106	NES	610
ENU	6107	NES	611

ENU	6108	NES	612
ENU	6117	NES	614
ENU	6126	NES	660
ENU	6127	NES	661
ENU	6147	NES	652
ENU	6148	NES	653
ENU	6167	NES	618
ENU	6168	NES	619
ENU	6197	NES	651
ENU	6210	NES	617
ENU	6241	NES	616
ENU	6257	NES	644
ENU	6307 L	NES	683
ENU	6516 L	NES	600
ENU	6517 L	NES	601
ENU	6627	NES	680
ENU	6636	NES	655
ENU	6646	NES	685
ENU	6656 L	NES	682
ENU	6657	NES	686
ENU	6707	NES	678
ENU	6717	NES	674
ENU	6725	NES	670
ENU	6745	NES	673
ENU	6905	NES	696
ENU	6910	NES	697
ENU	6935	NES	690
ENU	6936	NES	691
ENU	6937	NES	692
ENU	6940	NES	698
ENU	6971	NES	699
ENU	7980	NES	799
ENV	3003	ENV	301
ENV	3930	ENV	370
ENV	4021	ENV	400
ENV	4104	ENV	451
ENV	4201	ENV	440
ENV	4241	ENV	445
ENV	4351	ENV	480
ENV	4404	CE	450
ENV	4514	CE	451
ENV	4621	CE	423
ENV	4905	ENV	496
ENV	4932	ENV	498
ENV	4949	CEP	499
ENV	4949	ENV	499
ENV	5005	ENV	522
ENV	5126	ENV	551
ENV	5206	ENV	540
ENV	5306	ENV	580
ENV	5517	ENV	500
ENV	5625	CE	523
ENV	5930	ENV	591
ENV	6006	ENV	670
ENV	6115	ENV	655
ENV	6116	ENV	654
ENV	6117	ENV	656
ENV	6118	ENV	657
ENV	6130	ENV	653
ENV	6211	ENV	644
ENV	6216	ENV	642
ENV	6236	ENV	641
ENV	6286	ENV	643
ENV	6409	ENV	634
ENV	6437	ENV	601
ENV	6438	ENV	602
ENV	6516	ENV	600
ENV	6606	ENV	613
ENV	6656	ENV	616
ENV	6666	ENV	611
ENV	6905	ENV	696
ENV	6910	ENV	697
ENV	6916	ENV	693
ENV	6932	ENV	671
ENV	6940	ENV	698
ENV	6971	ENV	699
ENV	7980	ENV	799
ENY	3003	EY	300
ENY	3004	EY	328
ENY	3005	EY	301
ENY	3006 L	EY	311
ENY	3511	EY	313
ENY	3513	EY	319
ENY	3515	EY	317
ENY	3521	EY	315
ENY	3531	EY	312
ENY	3541	EY	351
ENY	3551	EY	316
ENY	3701	EY	303
ENY	3931	EY	331
ENY	4161	EY	460
ENY	4201	EY	412
ENY	4221	EY	406
ENY	4353	EY	410
ENY	4571	EY	411
ENY	4660	EY	420
ENY	4905	EY	496
ENY	4949	EY	400
ENY	5561	EY	518
ENY	5781	EY	522
ENY	6151	EY	606
ENY	6203	EY	616
ENY	6241	EY	622
ENY	6261	EY	635
ENY	6262	EY	636
ENY	6321	EY	608
ENY	6401	EY	612
ENY	6451	EY	615
ENY	6502	EY	626
ENY	6581	EY	624
ENY	6591	EY	621
ENY	6601	EY	613
ENY	6611	EY	623
ENY	6651	EY	618
ENY	6661	EY	620
ENY	6663	EY	637
ENY	6711	EY	632
ENY	6731	EY	631
ENY	6780 C	EY	633
ENY	6801	EY	634
ENY	6810	EY	601
ENY	6821	EY	640
ENY	6822	EY	642
ENY	6905	EY	696
ENY	6910	EY	697
ENY	6932	EY	611
ENY	6940	EY	698
ENY	6971	EY	699
ENY	6986	EY	625
ENY	7980	EY	799
EOC	4949	CEP	499
EOC	5052	COE	560
EOC	5310	COE	540
EOC	5860	COE	550
EOC	6196	COE	630
EOC	6430	COE	620
EOC	6431	COE	621
EOC	6850	COE	631
EOC	6905	COE	696
EOC	6910	COE	697
EOC	6934	COE	643
EOC	6934	COE	632
EOC	6939	COE	691
EOC	6940	COE	698
EOC	6971	COE	699
EPH	4033	EDH	451
EPH	6185	EDH	652
EPH	6305	EDH	654
EPH	6395	EDH	653
EPH	6411	EDH	651
EPH	6942	EDH	672
EPH	7936	EDH	756
EPH	7937	EDH	755
ESE	3034	EDS	331
ESE	3932	EDS	301
ESE	3940	EDS	306
ESE	4011	EDS	400
ESE	4210	EDS	403
ESE	4905	EDS	496
ESE	4943	EDS	405
ESE	6215	EDS	602
ESE	6235	EDS	604
ESE	6385	EDS	635
ESE	6415	EDS	605
ESE	6905	EDS	696
ESE	6939	EDS	690
ESE	6940	EDS	698
ESE	7922	EDS	731
ESI	3123	ISE	357
ESI	3154	ISE	352
ESI	3305	ISE	301
ESI	3305 L	ISE	302
ESI	3502	ISE	351
ESI	4221	ISE	452
ESI	4235	ISE	462
ESI	4312	ISE	470
ESI	4313	ISE	471
ESI	4523	ISE	453
ESI	4545	ISE	480
ESI	4554	ISE	481
ESI	4560	ISE	451
ESI	4567	ISE	401
ESI	4568	ISE	402
ESI	4569	ISE	403
ESI	4935	ISE	499
ESI	4949	CEP	499
ESI	5125	ISE	557
ESI	5135	ISE	558
ESI	5236	ISE	562
ESI	5307	ISE	570
ESI	5308	ISE	571
ESI	5309	ISE	572
ESI	5570	ISE	551
ESI	5571	ISE	552
ESI	6127	ISE	657
ESI	6136	ISE	658
ESI	6137	ISE	659
ESI	6222	ISE	660
ESI	6239	ISE	662
ESI	6316	ISE	670
ESI	6317	ISE	671
ESI	6337	ISE	680
ESI	6349	ISE	678
ESI	6358	ISE	620
ESI	6408	ISE	601
ESI	6417	ISE	604
ESI	6418	ISE	605
ESI	6429	ISE	606
ESI	6438	ISE	602
ESI	6439	ISE	603
ESI	6448	ISE	608
ESI	6458	ISE	607
ESI	6499	ISE	609
ESI	6508	ISE	684
ESI	6509	ISE	685
ESI	6526	ISE	611
ESI	6527	ISE	612
ESI	6528	ISE	652
ESI	6529	ISE	651
ESI	6546	ISE	676
ESI	6547	ISE	677
ESI	6548	ISE	681
ESI	6558	ISE	686
ESL	2422	EH	241
ETC	3323 C	ENT	354
ETC	3326	ENT	380
ETC	3331 L	ENT	357
ETC	3334	ENT	351
ETC	3334 L	ENT	352
ETC	3340 L	ENT	356
ETC	3342 L	ENT	355
ETC	3344 L	ENT	358
ETC	3353	ENT	353
ETC	4332 L	ENT	457
ETD	4949	CEP	499
ETG	3530 L	MSE	391
ETG	3532	MSE	392
ETG	3935	ENT	396
ETG	3945	ENT	399
ETG	4905	ENT	496
ETG	4940	ENT	490
ETG	4949	CEP	499
ETG	4949	ENT	499
ETI	3411 C	ENT	320
ETI	3412 C	ENT	321
ETI	4405	ENT	470
ETI	4406	ENT	471
ETI	4407	ENT	472
ETM	4801 L	ENT	473
ETM	4804 L	ENT	474
EUH	2000	HY	200
EUH	2001	HY	201
EUH	2002	HY	202
EUH	3101	HY	307
EUH	3121	HY	313
EUH	3122	HY	314
EUH	3123	HY	315
EUH	3140	HY	318
EUH	3144	HY	319
EUH	3202	HY	324
EUH	3206	HY	327
EUH	3233	HY	325
EUH	3234	HY	326
EUH	3401	HY	308

TABLE 1

EUH	3412	HY	309	EXP	6527 C	PSY	634	FOR	6742	FRC	631
EUH	3500	HY	335	EXP	6609	PSY	638	FOS	2001	FS	201
EUH	3501	HY	336	EXP	6717 C	PSY	632	FOS	2002	FS	202
EUH	3502	HY	337	EXP	6939	PSY	637	FOS	2003	FS	203
EUH	3571	HY	330	EXP	7127 C	PSY	730	FOS	3042	FS	301
EUH	3572	HY	331	EXP	7129	PSY	733	FOS	4222	FS	403
EUH	3573	HY	332	EXP	7689	PSY	737	FOS	4232	FS	415
EUH	4092	HY	412	FIL	3210	BR	388	FOS	4252	FS	441
EUH	4100	HY	407	FIL	4200	BR	450	FOS	4311	FS	402
EUH	4223	HY	422	FIL	4202	BR	424	FOS	4321	FS	412
EUH	4244	HY	414	FIL	6101	COM	625	FOS	4411	FS	404
EUH	4280	HY	415	FIN	3105	FI	324	FOS	4427	FS	450
EUH	4313	HY	421	FIN	3233	FI	321	FOS	4513	FS	451
EUH	4314	HY	460	FIN	3303	FI	322	FOS	4531	FS	453
EUH	4315	HY	461	FIN	3403	FI	326	FOS	4541	FS	455
EUH	4404	HY	408	FIN	4244	FI	421	FOS	4551	FS	452
EUH	4414	HY	409	FIN	4313	FI	420	FOS	4722	FS	414
EUH	4451	HY	426	FIN	4414	FI	427	FOS	4731	FS	411
EUH	4463	HY	430	FIN	4424	FI	428	FOS	4905	FS	496
EUH	4464	HY	431	FIN	4504	FI	422	FOS	4931	FS	421
EUH	4511	HY	423	FIN	4514	FI	424	FOS	4949	FS	400
EUH	4513	HY	424	FIN	4604	FI	429	FOS	6226	FS	601
EUH	4601	HY	419	FIN	4934	FI	498	FOS	6315	FS	607
EUH	4603	HY	420	FIN	5354	FI	520	FOS	6355	FS	603
EUH	4610	HY	417	FIN	5405	FI	590	FOS	6371	FS	604
EUH	4611	HY	418	FIN	5425	FI	528	FOS	6428	FS	606
EUH	4640	HY	434	FIN	5525	FI	524	FOS	6435	FS	621
EUH	4641	HY	435	FIN	6246	FI	625	FOS	6455	FS	613
EUH	4650	HY	410	FIN	6446	FI	627	FOS	6641	FS	602
EUH	4651	HY	411	FIN	6456	FI	637	FOS	6726	FS	608
EUH	5546	HY	504	FIN	6626	FI	629	FOS	6905	FS	696
EUH	5934	HY	501	FIN	6816	FI	622	FOS	6910	FS	697
EUH	6126	HY	613	FIN	6829	FI	620	FOS	6915	FS	600
EUH	6213	HY	618	FIN	6905	FI	696	FOS	6936	FS	651
EUH	6226	HY	619	FIN	6937	BA	620	FOS	6938	FS	661
EUH	6289	HY	623	FIN	6940	FI	698	FOS	6940	FS	698
EUH	6298	HY	620	FIN	6971	FI	699	FOS	6971	FS	699
EUH	6320	HY	626	FIN	7808	FI	727	FRC	3212	FC	335
EUH	6339	HY	624	FIN	7809	FI	728	FRC	3212 L	FC	336
EUH	6342	HY	625	FIN	7938	FI	790	FRC	4223	FC	441
EUH	6508	HY	633	FIN	7980	FI	799	FRC	4224 L	FC	450
EUS	4935	ASC	460	FLE	4333	EDS	484	FRC	4225 L	FC	451
EVS	4215	ENT	452	FLE	6337	EDS	685	FRC	4241	FC	442
EVT	3065	EDV	302	FLE	6946	EDS	682	FRC	4244	FC	449
EVT	3365	EDV	303	FLE	7939	EDS	785	FRC	4271	FC	417
EVT	4302	EDV	480	FNR	3011	FRC	381	FRC	4411	FC	403
EVT	4940	EDV	405	FNR	3050	FRC	302	FRC	4612	FC	437
EVT	5166	EDV	560	FNR	3421	FRC	382	FRC	4905	FC	496
EVT	5167	EDV	580	FNR	3650	FRC	383	FRC	4931	FC	470
EVT	6165	EDV	601	FNR	3905	FRC	396	FRC	4949	FC	400
EVT	6170	EDV	660	FNR	4612	FRC	450	FRC	4949	FC	400
EVT	6264	EDV	600	FNR	4623	FRC	482	FRC	6233	HSC	630
EVT	6265	EDV	602	FNR	4660	FRC	481	FRC	6243	HSC	631
EVT	6381	EDV	661	FNR	4905	FRC	496	FRC	6251	HSC	632
EVT	6905	EDV	696	FNR	4931	FRC	412	FRC	6252	HSC	633
EVT	6910	EDV	697	FNR	4940	FRC	400	FRC	6256	HSC	634
EVT	6933	EDV	690	FNR	6608	FRC	601	FRE	1110	FH	101
EVT	6940	EDV	698	FNR	6905	FRC	696	FRE	1111	FH	104
EVT	6949	EDV	655	FNR	6910	FRC	697	FRE	1112	FH	105
EVT	7661	EDV	761	FNR	6933	FRC	611	FRE	1121	FH	134
EVT	7762	EDV	760	FNR	6934	FRC	612	FRE	1122	FH	135
EVT	7930	EDV	700	FNR	6940	FRC	698	FRE	2200	FH	202
EXP	3204	PSY	335	FNR	6971	FRC	699	FRE	2240	FH	204
EXP	3604 C	PSY	334	FOL	2905	FLE	296	FRE	3300	FH	305
EXP	3714 L	PSY	379	FOL	3730	FLE	302	FRE	3320	FH	306
EXP	3719 L	MED	300	FOL	4905	FLE	496	FRE	3500	FH	330
EXP	3933	PSY	336	FOL	6732	RLL	619	FRE	4421	FH	405
EXP	4104	PSY	435	FOR	3003	FRC	320	FRE	4780	FH	404
EXP	4124 C	PSY	430	FOR	3120	FRC	326	FRE	4850	FH	406
EXP	4204 C	PSY	445	FOR	3123	FRC	360	FRE	4905	FH	496
EXP	4205 L	PSY	431	FOR	3140	FRC	317	FRE	5423	FH	505
EXP	4214	PSY	436	FOR	3333	FRC	333	FRE	5840	FH	512
EXP	4254	PSY	437	FOR	3462	FRC	321	FRE	5851	FH	506
EXP	4502 C	PSY	433	FOR	3710	FRC	318	FRE	6050	FH	602
EXP	4504 C	PSY	434	FOR	4030	FRC	413	FRE	6051	FH	603
EXP	4635	PSY	438	FOR	4151	FRC	460	FRE	6730	FH	606
EXP	4934 C	PSY	439	FOR	4162	FRC	403	FRE	6785	FH	604
EXP	5116	PSY	578	FOR	4212	FRC	406	FRE	6940	FH	698
EXP	6098	PSY	686	FOR	4541	FRC	420	FRT	2276	FH	250
EXP	6108	PSY	678	FOR	4612	FRC	450	FRT	2301	FH	251
EXP	6108	ZY	636	FOR	4621	FRC	416	FRW	3100	FH	327
EXP	6109	PSY	676	FOR	4624	FRC	461	FRW	3101	FH	328
EXP	6109	ZY	638	FOR	4733	FRC	447	FRW	3102	FH	329
EXP	6119	PSY	679	FOR	5640	FRC	462	FRW	4216	FH	421
EXP	6126 C	PSY	630	FOR	6170	FRC	618	FRW	4275	FH	431
EXP	6128	PSY	675	FOR	6310	FRC	626	FRW	4300	FH	423
EXP	6209	PSY	635	FOR	6340	FRC	620	FRW	4350	FH	450
EXP	6519	PSY	636	FOR	6543	FRC	680	FRW	4410	FH	417

FRW	4420	FH	419
FRW	4480	FH	460
FRW	4535	FH	442
FRW	4555	FH	445
FRW	4710	FH	430
FRW	4770	FH	480
FRW	5481	FH	560
FRW	5556	FH	545
FRW	6215	FH	621
FRW	6217	FH	622
FRW	6276	FH	631
FRW	6288	FH	670
FRW	6311	FH	623
FRW	6318	FH	645
FRW	6328	FH	671
FRW	6340	FH	620
FRW	6351	FH	650
FRW	6415	FH	618
FRW	6416	FH	619
FRW	6510	FH	641
FRW	6536	FH	642
FRW	6560	FH	660
FRW	6711	FH	630
FRW	6755	FH	680
FRW	6805	FH	610
FRW	6825	FH	615
FRW	6900	FH	600
FRW	6905	FH	696
FRW	6910	FH	697
FRW	6971	FH	699
FRW	7980	FH	799
GEA	3210	GPY	380
GEA	3223	GPY	381
GEA	3270	GPY	305
GEA	3300	GPY	385
GEA	3410	GPY	386
GEA	3464	GPY	384
GEA	3504	GPY	370
GEA	3554	GPY	371
GEA	3600	GPY	377
GEA	3624	GPY	373
GEA	3753	GPY	374
GEA	4684	GPY	477
GEA	6109	GPY	690
GEA	6179	GPY	625
GEA	6219	GPY	681
GEA	6309	GPY	685
GEA	6419	GPY	686
GEA	6468 L	GPY	688
GEA	6469	BPY	689
GEB	4949	BA	499
GEB	5756	BA	564
GEB	5805	BA	591
GEB	6705	BA	610
GEB	6757	BA	661
GEO	1000	BPY	105
GEO	1010	GPY	100
GEO	2410 C	GPY	202
GEO	2420	GPY	201
GEO	2500	GPY	200
GEO	2932	GPY	292
GEO	3200	GPY	300
GEO	3200 L	GPY	301
GEO	3315	GPY	315
GEO	3370	GPY	331
GEO	3430	GPY	351
GEO	3471	GPY	341
GEO	3502	GPY	321
GEO	3602	GPY	326
GEO	4100 C	GPY	405
GEO	4124 C	GPY	401
GEO	4164	GPY	408
GEO	4201 C	GPY	400
GEO	4905	GPY	496
GEO	4930	GPY	489
GEO	4944	GPY	499
GEO	4970	GPY	492
GEO	5105 C	GPY	505
GEO	5125 C	GPY	501
GEO	5145 C	GPY	502
GEO	5166 C	GPY	508
GEO	5437 C	GPY	551
GEO	5567	GPY	527
GEO	5605	GPY	526
GEO	5704	GPY	538
GEO	5809	GPY	523
GEO	5839	GPY	635
GEO	5905	GPY	596
GEO	5930	GPY	579
GEO	5945 C	GPY	506
GEO	6058	GPY	600
GEO	6118 C	GPY	603
GEO	6356	GPY	635
GEO	6429	GPY	661
GEO	6435	GPY	651
GEO	6509	GPY	621
GEO	6905	GPY	696
GEO	6910	GPY	697
GEO	6938	GPY	679
GEO	6940	GPY	698
GEO	6946	GPY	606
GEO	6971	GPY	699
GEO	7980	GPY	799
GER	1120	GN	133
GER	1121	GN	134
GER	1122	GN	135
GER	2200	GN	202
GER	2250	GN	201
GER	3410	GN	304
GER	3420	GN	305
GER	3500	GN	330
GER	3501	GN	331
GER	4400	GN	406
GER	4840	GN	412
GER	6050	GN	602
GER	6051	GN	603
GER	6405	GN	606
GER	6841	GN	620
GER	6845	GN	612
GER	6940	GN	698
GET	2480	GN	250
GEW	2930	GN	251
GEW	3100	GN	327
GEW	3101	GN	328
GEW	4300	GN	440
GEW	4332	GN	413
GEW	4400	GN	455
GEW	4513	GN	428
GEW	4530	GN	429
GEW	4542	GN	430
GEW	4554	GN	445
GEW	4730	GN	460
GEW	4750	GN	490
GEW	4820	GN	480
GEW	4905	GN	496
GEW	6305	GN	640
GEW	6335	GN	613
GEW	6401	GN	651
GEW	6425	GN	652
GEW	6489	GN	653
GEW	6517	GN	628
GEW	6535	GN	629
GEW	6545	GN	630
GEW	6558	GN	645
GEW	6600	GN	604
GEW	6735	GN	660
GEW	6755	GN	690
GEW	6900	GN	600
GEW	6905	GN	696
GEW	6910	GN	697
GEW	6938	GN	650
GEW	6971	GN	699
GEY	6646	GER	601
GLY	1000	GY	109
GLY	2015	GY	201
GLY	2026	GY	220
GLY	2100	GY	202
GLY	2152	GY	240
GLY	4155	GY	400
GLY	4200	GY	408
GLY	4210	GY	407
GLY	4301	GY	418
GLY	4400	GY	409
GLY	4511	GY	427
GLY	4515	GY	428
GLY	4522	GY	429
GLY	4610	GY	421
GLY	4700	GY	401
GLY	4750	GQ	440
GLY	4800	GY	411
GLY	4865	GY	480
GLY	4905	GY	496
GLY	4930	GY	490
GLY	5050	GY	580
GLY	5221	GY	518
GLY	5230	GY	515
GLY	5241	GY	508
GLY	5450	GY	582
GLY	5555	GY	560
GLY	5640	GY	507
GLY	5704	GY	501
GLY	5734	GY	517
GLY	5790	GY	540
GLY	5820	GY	550
GLY	5860	GY	584
GLY	5861	GY	585
GLY	6225	GY	618
GLY	6245	GY	616
GLY	6250	GY	611
GLY	6265	GY	614
GLY	6341	GY	661
GLY	6354	GY	619
GLY	6351	GY	662
GLY	6420	GY	600
GLY	6530	GY	640
GLY	6574	GY	664
GLY	6575	GY	668
GLY	6615	GY	625
GLY	6620	GY	623
GLY	6645	GY	607
GLY	6651	GY	608
GLY	6660	GY	624
GLY	6705	GY	601
GLY	6813	GY	612
GLY	6829	GY	651
GLY	6841	GY	676
GLY	6896	GY	613
GLY	6905	GY	696
GLY	6910	GY	699
GLY	6931	GY	660
GLY	6932	GY	690
GLY	6940	GY	698
GLY	6971	GY	699
GMS	5702	MED	504
GMS	5905	MED	596
GMS	5930	MED	588
GMS	5931	MED	589
GMS	5932	MED	590
GMS	5933	MED	594
GMS	5934	MED	595
GMS	5936	MED	597
GMS	5937	MED	598
GMS	5938	MED	599
GMS	6700	MED	600
GMS	6701	MED	601
GMS	6703	MED	603
GMS	6710	MED	633
GMS	6732	MED	635
GMS	6905	MED	696
GMS	6910	MED	697
GMS	6920	MED	631
GMS	6940	MED	698
GMS	6971	MED	699
GMS	7711	MED	711
GMS	7712	MED	612
GMS	7713	MED	713
GMS	7714	MED	714
GMS	7715	MED	768
GMS	7720	MED	744
GMS	7721	MED	715
GMS	7730	MED	745
GMS	7731	MED	743
GMS	7733	MED	765
GMS	7740	MED	718
GMS	7741	MED	719
GMS	7742	MED	520
GMS	7743	MED	770
GMS	7750	MED	766
GMS	7760	MED	767
GMS	7980	MED	799
GRE	1120	GK	133
GRE	1121	GK	134
GRE	1122	GK	135
GRW	2250	GK	201
GRW	3100	GK	307
GRW	3101	GK	308
GRW	3102	GK	309
GRW	4905	GK	496
HCA	4102	ASC	472
HCA	4112	HRP	405
HCA	4410 L	ASC	471
HCA	4511	HRP	406
HCA	4802	HRP	460
HCA	6101	HA	600

TABLE 1

HCA	6201	HA	602
HCA	6302	HA	601
HCA	6391	HA	610
HCA	6401	HA	612
HCA	6691	HA	611
HCA	6716	HA	691
HCA	6717	HA	640
HCA	6801	HA	641
HCA	6811	HA	646
HCA	6905	HA	696
HEB	1100	HW	133
HEB	1101	HW	134
HEB	1102	HW	135
HEB	3230	HW	307
HEB	3231	HW	308
HEB	3232	HW	309
HES	1006	PHR	161
HES	2000	PHR	261
HES	2001	PHR	262
HES	2400	PHR	266
HES	3144	PHR	310
HES	3301	PHR	361
HES	3404	PHR	336
HES	3431	PHR	359
HES	3945	PHR	380
HES	4100	HY	443
HES	4302	PHR	440
HES	4450	PHR	451
HES	4451	PHR	452
HES	4510	PHR	465
HES	4540	PHR	462
HES	4561	PHR	463
HES	4622 C	PHR	468
HES	4905	HRP	496
HES	4905	PHR	496
HES	4946	PHR	491
HES	5935	PHR	545
HES	6125	PHR	661
HES	6165	PHR	663
HES	6266	PHR	660
HES	6328	PHR	622
HES	6904	PHR	664
HES	6905	PHR	696
HES	6910	PHR	697
HES	6940	PHR	698
HES	6971	PHR	699
HIS	3152	HY	300
HIS	3300	HY	360
HIS	3483	HY	342
HIS	4114	HY	400
HIS	4470	EGC	401
HIS	4470	HY	401
HIS	4471	EGC	402
HIS	4471	HY	402
HIS	4472	EGC	402
HIS	4472	HY	402
HIS	4905	HY	496
HIS	4930	HY	433
HIS	4970	HY	497
HIS	6060	HY	602
HIS	6061	HY	603
HIS	6148	HY	640
HIS	6905	HY	696
HIS	6910	HY	697
HIS	6940	HY	698
HIS	6971	HY	699
HIS	7289	HY	700
HIS	7980	HY	799
HLP	5936	PHR	545
HLP	6345	PHR	605
HOS	6112	HSC	603
HOS	6122	HSC	604
HOS	6201	HSC	605
HOS	6212	HSC	606
HOS	6231	HSC	607
HOS	6311	HSC	611
HOS	6331	HSC	615
HOS	6351	HSC	614
HOS	6361	HSC	626
HOS	6412	HSC	612
HOS	6611 C	HSC	620
HOS	6631	HSC	621
HOS	6905	HSC	696
HOS	6910	HSC	697
HOS	6931	HSC	601
HOS	6932	HSC	691
HOS	6940	HSC	698
HOS	6941	HSC	692
HOS	6971	HSC	699
HOS	7980	HSC	799
HSC	1001	HRP	101
HSC	1005	ASC	181
HSC	2531	CS	204
HSC	3520 L	HRP	332
HSC	4151	HRP	408
HSC	4162	HRP	407
HSC	4221	HRP	410
HSC	4390	HRP	409
HSC	4391	HRP	414
HSC	4516	HRP	433
HSC	4517	HRP	434
HSC	4522	HRP	431
HSC	4540	HRP	417
HSC	4550	HRP	401
HSC	4573	HRP	411
HSC	4930	HRP	490
HSC	4940	HRP	465
HSC	6395	HRP	600
HSC	6905	HRP	696
HSC	6910	HRP	697
HSC	6939	HRP	690
HSC	6940	HRP	698
HUM	2210	HUM	211
HUM	2229	HUM	291
HUM	2230	HUM	221
HUM	2239	HUM	292
HUM	2250	HUM	231
HUM	2259	HUM	293
HUM	2410	HUM	232
HUM	2410	AS	232
HUM	2420	HUM	233
HUM	2510	FA	200
HUM	2930	HUM	250
HUM	3220	HUM	321
HUM	3251	HUM	381
HUM	3421	HUM	333
HUM	3431	HUM	311
HUM	3473	HUM	371
HUM	3930	HUM	350
HUM	4563	ASC	473
HUM	4564	ASC	474
HUN	2201	FS	250
HUN	3122	CCD	311
HUN	3221	FS	350
HUN	4241	FS	405
HUN	6191	FS	645
HUN	6245	FS	641
HUN	6292	FS	644
HUN	6301	FS	643
HUN	6321	FS	642
ICW	6400	GN	624
ICW	6401	GN	625
IDS	1120	ASC	180
IDS	1920	ASC	150
IDS	2180	ASC	210
IDS	2188	UCI	251
IDS	2190	HUM	240
IDS	2301	UCI	352
IDS	2342	UCI	252
IDS	2343	UCI	253
IDS	2931	UCH	291
IDS	2931	UCH	292
IDS	2931	UCH	293
IDS	3158	UCI	371
IDS	3181	ASC	301
IDS	3302	UCI	353
IDS	4122	ASC	461
IDS	4125	ASC	462
IDS	4159	ASC	476
IDS	4162	ASC	477
IDS	4163	ASC	478
IDS	4182	ASC	401
IDS	4183	ASC	402
IDS	4905	ASC	496
IDS	4906	ASC	498
IDS	4925	ASC	440
IDS	4938	ASC	487
IDS	4940	JASC	480
IND	3100	IR	372
IND	3100	IR	372
IND	3130	IR	373
IND	3215	IR	331
IND	3216	IR	332
IND	3217	IR	333
IND	3311	IR	315
IND	3420	IR	341
IND	3421	IR	342
IND	3422	IR	375
IND	3430	IR	343
IND	4222	IR	431
IND	4223	IR	432
IND	4226	IR	433
IND	4240	IR	402
IND	4500	IR	443
INR	2002	PCL	209
INR	3102	PCL	310
INR	3103	PCL	311
INR	4114	PCL	436
INR	4204	PCL	435
INR	4244	PCL	438
INR	4403	PCL	404
INR	4502	PCL	437
INR	5207	PCL	524
INR	5245	PCL	540
INR	5334	PCL	547
INR	5505	PCL	527
INR	6087	PCL	628
INR	6417	PCL	643
INR	6607	PCL	627
ISC	2400	CPS	216
ISC	2401	CPS	226
ISC	2402	CPS	236
ISC	2452	CPS	225
ISC	2453	CPS	241
ISC	2454	CPS	245
ISC	3455	CPS	343
ITA	1120	IN	133
ITA	1121	IN	134
ITA	1122	IN	135
ITA	3400	IN	305
ITA	4905	IN	496
ITW	3100	IN	327
ITW	3101	IN	328
ITW	3102	IN	329
JAP	1120	JE	133
JAP	1121	JE	134
JAP	1122	JE	135
JOU	3100	JM	301
JOU	3110	JM	302
JOU	3601	JM	342
JOU	4004	JM	407
JOU	4104	JM	402
JOU	4200	JM	403
JOU	4202	JM	404
JOU	4300	JM	413
JOU	4301	JM	432
JOU	4302	JM	408
JOU	4304	JM	420
JOU	4602	JM	442
JOU	4700	JM	465
JOU	4800	JM	415
JOU	4905	JM	496
JOU	4930	JM	490
JOU	4946	JM	450
JOU	4949	JM	499
JOU	4949	CEP	499
JOU	6105	JM	652
JOU	6108	JM	651
JOU	6190	COM	615
JOU	6501	COM	604
JOU	6891	COM	616
LAA	2710	LAE	271
LAA	2711	LAE	272
LAA	3350 L	LAE	331
LAA	3351 L	LAE	332
LAA	3352 L	LAE	333
LAA	3420	LAE	341
LAA	3421	LAE	342
LAA	3510	LAE	353
LAA	3530	LAE	363
LAA	4210	LAE	442
LAA	4355 L	LAE	431
LAA	4356 L	LAE	432
LAA	4357 L	LAE	433
LAA	4830	LAE	481
LAA	4905	LAE	496
LAA	4930	LAE	421
LAE	4235	EDS	494
LAE	4235	EH	494
LAE	4335	EDS	474
LAE	4414	EH	490
LAE	6301	EDE	671
LAE	6319	EDE	670
LAE	6365	EDS	670

LAE	6366	EDS	671
LAE	6379	EH	615
LAE	6714	EDE	672
LAE	6940	EH	698
LAE	6945	EDS	672
LAE	6947	EH	607
LAE	7936	ED	770
LAH	3130	HY	371
LAH	3201	HY	372
LAH	3300	HY	373
LAH	3301	HY	370
LAH	3712	HY	374
LAH	4433	HY	474
LAH	4471	HY	472
LAH	4472	HY	473
LAH	4510	HY	476
LAH	4520	HY	475
LAH	4620	HY	477
LAH	4630	HY	478
LAH	4722	HY	470
LAH	4723	HY	471
LAH	4732	HY	465
LAH	4733	HY	466
LAH	5934	HY	503
LAH	6938	HY	675
LAS	4905	LA	496
LAS	6905	LA	696
LAS	6938	LA	640
LAT	1120	LN	133
LAT	1121	LN	134
LAT	1122	LN	135
LAT	3230	LN	307
LAT	3231	LN	308
LAT	3232	LN	309
LAT	6840	LN	620
LAW	5000	LW	501
LAW	5001	LW	502
LAW	5100	LW	581
LAW	5300	LW	521
LAW	5301	LW	522
LAW	5400	LW	531
LAW	5401	LW	532
LAW	5501	LW	541
LAW	5502	LW	542
LAW	5700	LW	571
LAW	5701	LW	572
LAW	5791	LW	511
LAW	5792	LW	591
LAW	5793	LW	592
LAW	6004	LW	652
LAW	6010	LW	600
LAW	6020	LW	601
LAW	6030	LW	606
LAW	6035	LW	608
LAW	6040	LW	659
LAW	6050	LW	605
LAW	6051	LW	612
LAW	6062	LW	602
LAW	6063	LW	603
LAW	6064	LW	609
LAW	6065	LW	607
LAW	6080	LW	604
LAW	6112	LW	657
LAW	6125	LE	682
LAW	6200	LW	617
LAW	6210	LW	610
LAW	6220	LW	614
LAW	6225	LW	615
LAW	6235	LW	616
LAW	6250	LW	613
LAW	6260	LW	611
LAW	6261	LW	687
LAW	6285	LW	677
LAW	6286	LW	678
LAW	6302	LW	621
LAW	6304	LW	620
LAW	6320	LW	671
LAW	6330	LW	625
LAW	6331	LW	626
LAW	6335	LW	627
LAW	6340	LW	673
LAW	6360	LW	623
LAW	6380	LW	688
LAW	6405	LW	637
LAW	6420	LW	636
LAW	6422	LW	635
LAW	6430	LW	630
LAW	6433	LW	631
LAW	6440	LW	632
LAW	6450	LW	681
LAW	6460	LW	638
LAW	6470	LW	656
LAW	6480	LW	643
LAW	6503	LW	653
LAW	6505	LW	651
LAW	6510	LW	672
LAW	6520	LW	640
LAW	6523	LW	676
LAW	6525	LW	650
LAW	6530	LW	641
LAW	6540	LW	644
LAW	6542	LW	645
LAW	6544	LW	655
LAW	6545	LW	647
LAW	6548	LW	646
LAW	6550	LW	642
LAW	6552	LW	648
LAW	6560	LW	654
LAW	6570	LW	649
LAW	6585	LW	689
LAW	6600	LW	660
LAW	6601	LW	661
LAW	6610	LW	664
LAW	6616	LW	665
LAW	6620	LW	663
LAW	6621	LW	666
LAW	6624	LW	633
LAW	6650	LW	662
LAW	6710	LW	690
LAW	6715	LW	691
LAW	6720	LW	683
LAW	6721	LW	670
LAW	6725	LW	692
LAW	6726	LW	686
LAW	6730	LW	674
LAW	6740	LW	685
LAW	6750	LW	619
LAW	6751	LW	669
LAW	6760	LW	675
LAW	6905	LWT	696
LAW	6930	LW	695
LAW	6935	LW	694
LAW	6936	LW	684
LAW	6940	LW	700
LAW	6950	LW	680
LAW	6951	LW	679
LAW	6952	LW	693
LAW	7602	LWT	601
LAW	7603	LWT	602
LAW	7604	LWT	603
LAW	7611	LWT	605
LAW	7612	LWT	606
LAW	7613	LWT	607
LAW	7614	LWT	608
LAW	7617	LWT	613
LAW	7623	LWT	609
LAW	7624	LWT	610
LAW	7625	LET	611
LAW	7626	LWT	612
LAW	7633	LWT	618
LAW	7640	LWT	614
LAW	7641	LWT	615
LAW	7650	LWT	604
LAW	7905	LWT	696
LAW	7910	LWT	697
LAW	7911	LWT	617
LAW	7931	LWT	619
LAW	7932	LWT	616
LAW	7940	LWT	698
LAW	7941	LW	701
LAW	7942	LW	702
LEI	2000	PHR	244
LEI	2021	PHR	245
LEI	3260	PHR	340
LEI	3320 C	PHR	344
LEI	3330 C	PHR	342
LEI	3400	PHR	347
LEI	3540	PHR	345
LEI	3921	PHR	346
LEI	4500	PHR	446
LEI	4700 C	PHR	445
LEI	4711	PHR	448
LEI	4760 C	PHR	444
LEI	4770	PHR	447
LEI	4940	PHR	449
LIN	2000	LIN	200
LIN	2010	LIN	290
LIN	2701	SCH	212
LIN	2711	SCH	208
LIN	3030	FLE	351
LIN	3200	SCH	384
LIN	3221	LIN	380
LIN	3340	LIN	320
LIN	3371	LIN	363
LIN	3611	LIN	321
LIN	3700	LIN	360
LIN	3710	SCH	394
LIN	4231	SCH	486
LIN	4233	SCH	485
LIN	4260	SCH	487
LIN	4290	SCH	488
LIN	4400	EH	402
LIN	4712	SCH	494
LIN	4905	LIN	496
LIN	5025	LIN	505
LIN	5222	SCH	586
LIN	5231	SCH	585
LIN	5711 L	HRP	551
LIN	5715	LIN	594
LIN	5715	SCH	594
LIN	6118	LIN	640
LIN	6128	LIN	630
LIN	6129	LIN	631
LIN	6136	LIN	602
LIN	6222	LIN	610
LIN	6240	LIN	611
LIN	6241	LIN	612
LIN	6322	LIN	620
LIN	6377	LIN	661
LIN	6380	LIN	621
LIN	6381	LIN	622
LIN	6401	LIN	665
LIN	6415	LIN	652
LIN	6416	LIN	650
LIN	6417	EH	618
LIN	6435	LIN	605
LIN	6436	LIN	624
LIN	6600	LIN	655
LIN	6622	LIN	657
LIN	6705	SCH	695
LIN	6705 L	SCH	689
LIN	6707	SCH	694
LIN	6716	SCH	684
LIN	6905	LIN	696
LIN	6910	LIN	697
LIN	6932	LIN	690
LIN	6940	LIN	698
LIN	6971	LIN	699
LIN	7195	SCH	796
LIN	7295	SCH	785
LIN	7709	SCH	795
LIN	7938	EH	705
LIN	7980	LIN	799
LIS	2001	EH	201
LIS	2100	EH	202
LIT	2160	EH	235
LIT	2212	EH	214
LIT	2214	EH	215
LIT	2223	EH	216
LIT	2930	EH	251
LIT	3162	EH	314
LIT	3311	EH	341
LIT	3321	EH	345
LIT	3342	EH	346
LIT	3363	EH	347
LIT	3411	EH	348
LIT	3443	EH	375
LIT	4131	EH	418
LIT	4218	EH	411
LIT	4219	EH	412
LIT	4228	EH	416
LIT	4282	EH	481
LIT	4284	EH	482
LIT	4371	EH	480
LIT	4930	EH	489
LIT	6283	EH	670
LIT	6373	EH	665
LIT	6934	EH	687
LIT	7289	EH	770
LNW	4905	LN	496
LNW	5905	LN	596

TABLE 1

LNW	6902	LN	600
LNW	6905	LN	696
LNW	6910	LN	697
LNW	6940	LN	698
LNW	6971	NL	699
MAA	4102	MS	467
MAA	4103	MS	468
MAA	4104	MS	469
MAA	4211	MS	445
MAA	4212	MS	446
MAA	4213	MS	447
MAA	4226	MS	411
MAA	4227	MS	442
MAA	4228	MS	443
MAA	4402	MS	413
MAA	5102	MS	547
MAA	5103	MS	548
MAA	5104	MS	549
MAA	5226	MS	541
MAA	5227	MS	542
MAA	5228	MS	543
MAA	5402	MS	503
MAA	5506	MS	509
MAA	5507	MS	510
MAA	6236	MS	648
MAA	6237	MS	649
MAA	6238	MS	650
MAA	6406	MS	651
MAA	6407	MS	652
MAA	6408	MS	653
MAA	6616	MA	641
MAA	6117	MS	642
MAA	6618	MS	643
MAA	6626	MS	645
MAA	6627	MS	646
MAA	6628	MS	647
MAA	7526	MS	755
MAA	7527	MS	756
MAA	7528	MS	757
MAC	1104	MS	100
MAC	1132	MS	102
MAC	1132 L	MS	103
MAC	2144	MS	200
MAC	2223	MS	201
MAC	2233	MS	204
MAC	3224	MS	306
MAC	3311	MS	301
MAC	3312	MS	302
MAC	3313	MS	303
MAC	3314	MS	304
MAC	3411	MS	308
MAC	3472	MS	345
MAC	3473	MS	346
MAC	3474	MS	347
MAD	3104	MS	318
MAD	4203	MS	470
MAD	4204	MS	471
MAD	4401	MS	411
MAD	4504	MS	455
MAD	5306	MS	566
MAD	5307	MS	567
MAD	5405	MS	517
MAD	6206	MS	656
MAD	6207	MS	657
MAD	6208	MS	658
MAD	6407	MS	614
MAE	3810	MS	310
MAE	3811	MS	311
MAE	3812	MS	312
MAE	3822	MS	316
MAE	3823	MS	317
MAE	3836	MS	330
MAE	3837	MS	331
MAE	3838	MS	332
MAE	4330	EDS	454
MAE	4830	MS	400
MAE	4831	MS	401
MAE	4870	MS	402
MAE	5318	EDE	550
MAE	6115	EDE	650
MAE	6138	EDS	650
MAE	6636 C	ED	656
MAE	6940	MS	698
MAE	6947	EDS	654
MAE	7899	ED	751
MAF	2200	SY	230
MAF	2402	BES	252
MAF	4400	SY	409
MAF	4501	SY	432
MAF	4510	SY	433
MAF	6405	SY	609
MAF	6507	SY	632
MAF	6515	SY	633
MAF	6601	SY	634
MAF	6611	SY	635
MAG	3052	MCA	310
MAG	3220	MCA	303
MAG	3312	MCA	306
MAG	3503	MCA	333
MAG	3732	MCA	301
MAG	4062	MCA	404
MAG	4225	MC	407
MAG	4642	MCA	402
MAG	4941	MCA	400
MAN	3010	MGT	310
MAN	3151	MGT	355
MAN	3301	MGT	350
MAN	4052	MGT	481
MAN	4109	MGT	455
MAN	4201	MGT	410
MAN	4310	MGT	450
MAN	4410	MGT	460
MAN	4600	MGT	430
MAN	4720	MGT	480
MAN	4905	MGT	496
MAN	4949	BA	499
MAN	5205	MGT	510
MAN	5511	MGT	570
MAN	6051	MGT	610
MAN	6107	MGT	615
MAN	6108	BA	673
MAN	6156	BA	671
MAN	6205	MGT	616
MAN	6206	MGT	612
MAN	6207	MGT	611
MAN	6321	MGT	650
MAN	6421	MGT	660
MAN	6721	BA	679
MAN	6905	MGT	696
MAN	6910	MGT	697
MAN	6931	MGT	690
MAN	6933	MGT	614
MAN	6940	MGT	698
MAN	6971	MGT	699
MAN	7925	MGT	790
MAN	7980	MGT	799
MAP	3302	MS	305
MAP	4305	MS	409
MAP	4316	MS	464
MAP	4317	MS	465
MAP	4341	MS	415
MAP	4413	MS	407
MAP	4414	MS	408
MAP	4423	MS	414
MAP	5304	MS	501
MAP	5345	MS	505
MAP	5423	MS	504
MAP	6216	MS	609
MAP	6356	MS	615
MAP	6357	MS	616
MAP	6358	MS	617
MAP	6417	MS	607
MAP	6418	MS	608
MAP	6467	MS	618
MAP	6468	MS	619
MAP	6469	MS	620
MAP	6505	MS	601
MAP	6506	MS	602
MAP	6507	MS	603
MAP	7436	MS	712
MAP	7437	MS	713
MAP	7438	MS	714
MAP	7475	MS	711
MAP	7477	MS	771
MAP	7478	MS	772
MAR	3023	MKG	331
MAR	3203	MKG	362
MAR	3503	MKG	352
MAR	4153	MKG	461
MAR	4213	MKG	491
MAR	4243	MKG	421
MAR	4303	MKG	451
MAR	4407	MKG	441
MAR	4613	MKG	471
MAR	4614	MKG	472
MAR	4713	MKG	431
MAR	4763	MKG	481
MAR	4905	MKG	496
MAR	4933	MKG	493
MAR	5055	MKG	531
MAR	6246	MKG	621
MAR	6506	MKG	652
MAR	6516	MKG	665
MAR	6606	MKG	673
MAR	6616	MKG	671
MAR	6716	BA	630
MAR	6717	MKG	639
MAR	6806	MKG	631
MAR	6905	MKG	696
MAR	6910	MKG	697
MAR	6933	MKG	690
MAR	6940	MKG	698
MAR	6971	MKG	699
MAR	7518	MKG	752
MAR	7628	MKG	774
MAR	7639	MKG	790
MAR	7980	MKG	799
MAS	3113	MS	324
MAS	3114	MS	328
MAS	3203	MS	313
MAS	3301	MS	325
MAS	3302	MS	326
MAS	4103	MS	427
MAS	4104	MS	428
MAS	4105	MS	429
MAS	4115	MS	406
MAS	4124	MS	410
MAS	4156	MS	412
MAS	4311	MS	431
MAS	4312	MS	432
MAS	4313	MS	433
MAS	4321	MS	497
MAS	4322	MS	498
MAS	5156	MS	502
MAS	5331	MS	531
MAS	5332	MS	532
MAS	5333	MS	533
MAS	5334	MS	529
MAS	6158	MS	610
MAS	6329	MS	611
MAS	6346	MS	631
MAS	6347	MS	632
MAS	6348	MS	633
MAS	7215	MS	745
MAS	7216	MS	746
MAS	7217	MS	747
MAS	7396	MS	765
MAS	7397	MS	766
MAS	7398	MS	767
MAT	1033	MS	101
MAT	4905	MS	496
MAT	4930	MS	490
MAT	6905	MS	696
MAT	6910	MS	697
MAT	6932	MS	690
MAT	6971	MS	699
MAT	7980	MS	799
MCB	3013 L	MCS	303
MCB	3020 C	MCS	302
MCB	4203	MCS	406
MCB	4203 L	MCS	466
MCB	4303	MCS	421
MCB	4403	MCS	419
MCB	4403L	MCS	422
MCB	4413	MCS	420
MCB	4503 C	MCS	410
MCB	4905	MCS	496
MCB	6051 C	MCS	667
MCB	6056	MCS	666
MCB	6127	MCS	656
MCB	6275	MCS	650
MCB	6306	MCS	662
MCB	6407 C	MCS	658
MCB	6417 C	MCS	657
MCB	6457 C	MCS	668
MCB	6506 C	MCS	652
MCB	6506 L	MCS	653
MCB	6520	MCS	664
MCB	6717 C	MCS	663
MCB	6757 C	MCS	661
MCB	6905	MCS	696
MCB	6913	MCS	654
MCB	6971	MCS	699
MCB	6917	MCS	697

MCB	6937	MCS	669
MCB	6937	MCS	651
MCB	6940	MCS	698
MCB	6971	MCS	699
MCB	7914	MCS	751
MCB	7922	MCS	750
MCB	7980	MCS	799
MET	1010	ATS	150
MET	1010L	ATS	151
MET	2503L	ATS	201
MET	2701	ATS	200
MED	3100	ATS	301
MED	3160 L	ATS	302
MET	3711	ATS	300
MET	4401	ATS	446
MED	4402	ATS	447
MET	4460	ATS	443
MET	4905	ATS	496
MGF	1113	CMS	111
MGF	2202	MS	211
MHF	3202	MS	307
MHF	4102	MS	451
MHF	4404	MS	405
MHF	5107	MS	551
MHF	6306	MS	624
MHG	6307	MS	625
MHF	6308	MS	626
MIS	1022 C	MIS	101
MIS	1220 C	MIS	103
MIS	1300 C	MIS	102
MIS	1490 L	MIS	111
MIS	1491 L	MIS	112
MIS	1492 L	MIS	113
MIS	1654	MIS	105
MIS	2000 C	MIS	202
MIS	2300 C	MIS	203
MIS	2493 L	MIS	211
MIS	2495 L	MIS	212
MIS	2496 L	MIS	213
MIS	2601 C	MIS	201
MIS	3305 C	MIS	302
MIS	3404 C	MIS	303
MIS	3610 C	MIS	301
MIS	4101	MIS	404
MIS	4420 C	MIS	402
MIS	4421 C	MIS	403
MIS	4430 C	MIS	401
MLS	2030	MET	201
MLS	3308	MET	301
MLS	3308 L	MET	302
MLS	3627	MET	303
MLS	3627 L	MET	304
MLS	3628	MET	305
MLS	3628 L	MET	306
MLS	4830 C	MET	401
MLS	4831 C	MET	403
MLS	4832 C	MET	405
MLS	4833 C	MET	407
MLS	4840 C	MET	402
MLS	4841 C	MET	404
MLS	4842 C	MET	406
MLS	4843 C	MET	408
MLS	4850	MET	409
MLS	4851	MET	410
MLS	4852	MET	411
MLS	4853	MET	412
MLS	4934 C	MET	413
MLS	4935 C	MET	414
MLS	4936 C	MET	415
MMC	1000	JM	118
MMC	2100	JM	201
MMC	4200	JM	409
MMC	4301	JM	419
MMC	4420	JM	401
MMC	6202	COM	609
MMC	6303	COM	619
MMC	6304	COM	629
MMC	6400	COM	606
MMC	6421	COM	601
MMC	6560	COM	611
MMC	6660	COM	605
MMC	6905	COM	696
MMC	6910	COM	697
MMC	6920	COM	660
MMC	6936	COM	690
MMC	6971	COM	699
MTB	3364	MS	300
MTG	3212	MS	320
MTG	3213	MS	321
MTG	3214	MS	322
MTG	4233	MS	456
MTG	4234	MS	457
MTG	4302	MS	452
MTG	4303	MS	453
MTG	5316	MS	552
MTG	5317	MS	553
MTG	6227	MS	636
MTG	6228	MS	637
MTG	6237	MS	635
MTG	6256	MS	638
MTG	6257	MS	639
MTG	6258	MS	640
MTG	6266	MS	621
MTG	6267	MS	622
MTG	6268	MS	623
MTG	6276	MS	666
MTG	6277	MS	667
MTG	6278	MS	668
MTG	6346	MS	661
MTG	6347	MS	662
MTG	6348	MS	663
MTG	7396	MS	701
MTG	7397	MS	702
MTG	7398	MS	703
MUC	3201	MSC	307
MUC	3202	MSC	308
MUC	4301	MSC	407
MUC	6401	MSC	607
MUE	2111	MSC	261
MUE	2402	MSC	260
MUE	2403	MSC	284
MUE	2431	MSC	283
MUE	2440	MSC	277
MUE	2450	MSC	279
MUE	2460	MSC	281
MUE	2470	MSC	275
MUE	3093	MSC	366
MUE	3313	MSC	367
MUE	3320	MSC	368
MUE	3330	MSC	369
MUE	3401	MSC	390
MUE	4343	MSC	463
MUE	4404	MSC	462
MUE	4411	MSC	461
MUE	4412	MSC	460
MUE	4480	MSC	465
MUE	6080	ED	667
MUE	6143	MSC	669
MUE	6146	ED	666
MUE	6147	ED	665
MUE	6396	MSC	612
MUE	6406	ED	663
MUE	6416	ED	664
MUE	6932	MSC	667
MUE	7932	MSC	767
MUE	7938	ED	767
MUG	4101	MSC	405
MUG	4102	MSC	406
MUG	4201	MSC	408
MUH	3211	MSC	317
MUH	3212	MSC	318
MUH	3213	MSC	319
MUH	3541	MSC	315
MUH	4116	MSC	412
MUH	4331	MSC	414
MUH	4501	MSC	418
MUH	4561	MSC	417
MUH	6050	MSC	613
MUH	6930	MSC	615
MUH	7930	MSC	715
MUL	2011	MSC	210
MUL	2111	MSC	217
MUL	2112	MSC	211
MUL	2113	MSC	212
MUL	3341	MSC	312
MUL	3351	MSC	311
MUL	3362	MSC	314
MUL	4361	MSC	415
MUL	4371	MSC	411
MUL	4811	MSC	413
MUL	4813	MSC	419
MUL	6931	MSC	616
MUL	7931	MSC	716
MUN	1100	MSC	174
MUN	1210	MSC	170
MUN	1310	MSC	181
MUN	1310	MSC	171
MUN	1320	MSC	173
MUN	1330	MSC	172
MUN	1460	MSC	182
MUN	1470	MSC	175
MUN	1710	MSC	176
MUN	3100	MSC	374
MUN	3210	MSC	370
MUN	3310	MSC	381
MUN	3310	MSC	371
MUN	3320	MSC	373
MUN	3330	MSC	372
MUN	3340	MSC	386
MUN	3460	MSC	382
MUN	3470	MSC	375
MUN	3490	MSC	387
MUN	3710	MSC	376
MUN	6000	MSC	670
MUO	3501	MSC	383
MUR	3401	MSC	316
MUR	4801	MSC	416
MUS	4201	MSC	471
MUS	4202	MSC	472
MUS	4905	MSC	496
MUS	5665	MSC	410
MUS	6716	MSC	611
MUS	6905	MSC	696
MUS	6910	MSC	697
MUS	6940	MSC	698
MUS	6955 C	MSC	659
MUS	6971	MSC	699
MUS	7905	MSC	796
MUT	1111	MSC	101
MUT	1112	MSC	102
MUT	1113	MSC	103
MUT	1241	MSC	104
MUT	1242	MSC	105
MUT	1243	MSC	106
MUT	2116	MSC	201
MUT	2117	MSC	202
MUT	2118	MSC	203
MUT	2246	MSC	204
MUT	2247	MSC	205
MUT	2248	MSC	206
MUT	3321	MSC	305
MUT	3322	MSC	306
MUT	3611	MSC	303
MUT	3612	MSC	304
MUT	4411	MSC	403
MUT	4421	MSC	404
MUT	4641	MSC	481
MUT	6051	MSC	601
MUT	6751	MSC	608
MUT	6930	MSC	609
MUT	7930	MSC	709
MVB	1411	MSC	145
MVB	1412	MSC	143
MVB	1413	MSC	147
MVB	1415	MSC	149
MVB	2424	MSC	248
MVB	2421	MSC	245
MVB	2422	MSC	243
MVB	2423	MSC	247
MVB	2425	MSC	249
MVB	3431	MSC	345
MVB	3432	MSC	343
MVB	3433	MSC	347
MVB	3434	MSC	348
MVB	3435	MSC	349
MVB	4441	MSC	445
MVB	4442	MSC	443
MVB	4443	MSC	447
MVB	4445	MSC	449
MVK	1411	MSC	121
MVK	1412	MSC	157
MVK	1413	MSC	123
MVK	2111	MSC	262
MVK	2111	MSC	263
MVK	2121	MSC	264
MVK	2121	MSC	265
MVK	2121	MSC	266
MVK	2421	MSC	221
MVK	2422	MSC	257
MVK	2423	MSC	223
MVK	3431	MSC	321
MVK	3432	MSC	357
MVK	3433	MSC	323
MVK	4441	MSC	421

TABLE 1

MVK	4443	MSC	423	NUR	6151 C	NSG	655	ORH	4242 L	OH	422
MVO	1413	MSC	159	NUR	6152 C	NSG	656	ORH	4255 L	OH	425
MVO	1414	MSC	158	NUR	6153 C	NSG	653	ORH	4263	OH	442
MVO	2423	MSC	259	NUR	6160 C	NSG	640	ORH	4263 L	OH	443
MVO	2424	MSC	258	NUR	6161 C	NSG	642	ORH	4264 L	OH	444
MVO	3433	MSC	359	NUR	6162 C	NSG	645	ORH	4411	OH	441
MVO	3434	MSC	358	NUR	6163 C	NSG	643	ORH	4905	OH	496
MVO	4444	MSC	458	NUR	6164 C	NSG	646	ORH	4931	OH	403
MVO	6250	MSC	622	NUR	6165 C	NSG	647	ORH	4941	OH	400
MVO	6460	MSC	621	NUR	6166 C	NSG	648	ORH	6223	HSC	641
MVO	7260	MSC	722	NUR	6250 C	NSG	632	ORI	2001	THE	225
MVO	7470	MSC	721	NUR	6251 C	NSG	633	ORI	2002	THE	226
MVP	1411	MSC	151	NUR	6252 C	NSG	634	ORI	6430	THE	639
MVP	2421	MSC	251	NUR	6253 C	NSG	631	OTH	2000	OCT	201
MVP	3431	MSC	351	NUR	6350 C	NSG	625	OTH	3010	OCT	300
MVP	4441	MSC	451	NUR	6351 C	NSG	626	OTH	3110 L	OCT	361
MVS	1411	MSC	127	NUR	6352 C	NSG	627	OTH	3200 C	OCT	302
MVS	1412	MSC	129	NUR	6353 C	NSG	628	OTH	4320	OCT	421
MVS	1413	MSC	131	NUR	6450 C	NSG	603	OTH	4321	OCT	422
MVS	1414	MSC	133	NUR	6451 C	NSG	605	OTH	4412	OCT	431
MVS	1415	MSC	155	NUR	6460 C	NSG	612	OTH	4421	OCT	441
MVS'	2421	MSC	227	NUR	6461 C	NSG	613	OTH	4422	OCT	442
MVS	2422	MSC	229	NUR	6462 C	NSG	614	OTH	4810	OCT	461
MVS	2423	MSC	231	NUR	6550 C	NSG	621	OTH	4811	OCT	462
MVS	2424	MSC	233	NUR	6551 C	NSG	622	OTH	4812	OCT	463
MVS	2425	MSC	255	NUR	6552 C	NSG	623	OTH	4845	OCT	465
MVS	3431	MSC	327	NUR	6650	NSG	602	OTH	4846	OCT	466
MVS	3432	MSC	329	NUR	6660	NSG	607	OTH	4935	OCT	480
MVS	3433	MSC	331	NUR	6905	NSG	696	OTH	6418	OCT	603
MVS	3434	MSC	333	NUR	6910	NSG	697	OTH	6419	OCT	604
MVS	3435	MSC	355	NUR	6931	NSG	695	OTH	6539	OCT	613
MVS	4145	MSC	482	NUR	6945	NSG	671	OTH	6549	OCT	614
MVS	4441	MSC	427	NUR	6948	NSG	690	OTH	6770	OCT	600
MVS	4442	MSC	429	NUR	6971	NSG	699	OTH	6780	OCT	601
MVS	4443	MSC	431	NUU	3160 C	NSG	305	OTH	6827	OCT	651
MVS	4444	MSC	433	NUU	3161 C	NSG	306	OTH	6861 L	OCT	655
MVS	4445	MSC	455	NUU	3162 C	NSG	307	OTH	6905	OCT	696
MVV	1411	MSC	125	NUU	3210 C	NSG	315	PAD	4003	PCL	411
MVV	2421	MSC	225	NUU	3220 C	NSG	316	PAD	4034	PCL	413
MVV	3431	MSC	325	NUU	3221 C	NSG	317	PAD	4803	PCL	414
MVV	4441	MSC	425	NUU	3431	NSG	325	PAD	4949	CEP	499
MVW	1411	MSC	135	NUU	4225 C	NSG	415	PAD	5035	PCL	514
MVW	1412	MSC	139	NUU	4226 C	NSG	416	PAD	5807	PCL	560
MVW	1413	MSC	137	NUU	4227 C	NSG	417	PAD	6026	PCL	605
MVW	1414	MSC	141	NUU	4432	NSG	425	PAD	6053	PCL	604
MVW	1415	MSC	153	NUU	4500 C	NSG	405	PAD	6108	PCL	622
MVW	2421	MSC	235	NUU	4501 C	NSG	406	PAD	6109	PCL	623
MVW	2422	MSC	239	NUU	4502 C	NSG	407	PAD	6327	PCL	650
MVW	2423	MSC	237	NUU	6350 C	NSG	600	PAD	6836	PCL	624
MVW	2424	MSC	241	NUU	6435	NSG	670	PAD	6946	PCL	606
MVW	2425	MSC	253	NUU	6460	NSG	606	PAS	3000	MED	372
MVW	3431	MSC	335	NUU	6461	NSG	608	PAS	3001	MED	373
MVW	3432	MSC	339	NUU	6462	NSG	662	PAS	3002	MED	374
MVW	3433	MSC	337	NUU	6463	NSG	663	PAS	3003	MED	346
MVW	3434	MSC	341	NUU	6464	NSG	664	PAS	3005	MED	343
MVW	3435	MSC	353	NUU	6465	NSG	665	PAS	3006	MED	342
MVW	4441	MSC	435	NUU	6466	NSG	666	PAS	3007	MED	310
MVW	4442	MSC	439	NUU	6467	NSG	667	PAS	3020	MED	345
MVW	4443	MSC	437	NUU	6468	NSG	668	PAS	3021	MED	320
MVW	4444	MSC	441	NUU	6650	NSG	660	PAS	3022	MED	332
MVW	4445	MSC	453	NUU	6651	NSG	601	PAS	3023	MED	370
NSC	1101 L	NRO	100	OCE	4005	GY	470	PAS	3024	MED	341
NSC	1110	NRO	111	OCE	4016	COE	400	PAS	4004	MED	456
NSC	1121	NRO	112	OCG	6276	GY	675	PAS	4040	MED	467
NSC	1122	NRO	113	OCP	4290	COE	410	PAS	4042	MED	469
NSC	2102 L	NRO	200	OCP	6056	COE	640	PAS	4100	MED	454
NSC	2131	NRO	211	OCP	6165	COE	610	PAS	4105	MED	472
NSC	2132	NRO	212	OCP	6167	COE	611	PAS	4110	MED	457
NSC	2140	NRO	213	OCP	6169	COE	612	PAS	4115	MED	462
NSC	3103 L	NRO	300	OCP	6295	COE	613	PAS	4120	MED	470
NSC	3213	NRO	313	OCP	6296	COE	614	PAS	4125	MED	466
NSC	3214 C	NRO	311	OCP	6297	COE	615	PAS	4140	MED	465
NSC	3215 C	NRO	312	OCP	6555	COE	641	PAS	4150	MED	458
NSC	3221	NRO	331	OCP	6556	COE	642	PAS	4160	MED	464
NSC	3222	NRO	332	OMT	6631	ASC	600	PAS	4170	MED	455
NSC	4104 L	NRO	400	ORH	3231	OH	363	PAS	4200	MED	451
NSC	4224	NRO	431	ORH	3513 C	OH	331	PAS	4220	MED	452
NSC	4225	NRO	432	ORH	3514 C	OH	332	PAS	4240	MED	453
NSC	4230	NRO	411	ORH	3516	OH	333	PAS	4260	MED	468
NSC	4233	NRO	412	ORH	3534	OH	364	PAS	4300	MED	459
NSC	4246	NRO	413	ORH	3611	OH	340	PAS	4305	MED	471
NSC	4247	NRO	414	ORH	3731	OH	343	PAS	4320	MED	461
NSC	4248	NRO	415	ORH	3803	OH	321	PAS	4400	MED	460
NUR	4905	NSG	496	ORH	3813	OH	320	PAS	4420	MED	463
NUR	4930	NSG	430	ORH	3815 C	OH	365	PCB	3043 C	BTY	301
NUR	4943 C	NSG	418	ORH	4221	OH	462	PCB	3063	ZY	325
NUR	5940 C	NSG	572	ORH	4221 L	OH	463	PCB	3253 L	MCS	309
NUR	6150 C	NSG	654	ORH	4232	OH	421	PCB	3653 L	ZY	326

PCB	3673	ZY	321
PCB	4043 C	ZY	405
PCB	4136 L	MC5	423
PCB	4206	MC5	424
PCB	4233	MC5	405
PCB	4233 L	MC5	455
PCB	4253	MC5	408
PCB	4535	BCH	479
PCB	4675	ZY	450
PCB	4745 C	ZY	474
PCB	4930	BCH	436
PCB	5046 C	BTY	501
PCB	5115 C	BTY	551
PCB	5415 C	ZY	529
PCB	5545	ZY	545
PCB	6049	ZY	629
PCB	6069	ZY	664
PCB	6176	BTY	653
PCB	6176	MCS	633
PCB	6176 L	BTY	654
PCB	6176 L	MC5	634
PCB	6216	BTY	656
PCB	6216	MCS	636
PCB	6236	MC5	659
PCB	6236 L	MC5	660
PCB	6256	MC5	647
PCB	6307 C	ZY	628
PCB	6317 C	ZY	612
PCB	6356C	BTY	604
PCB	6357 C	ZY	605
PCB	6377 C	ZY	642
PCB	6447 C	ZY	626
PCB	6496 C	ZY	627
PCB	6577 C	ZY	665
PCB	6626 C	BTY	624
PCB	6686 C	ZY	669
PCB	6691	BTY	664
PCB	6796 C	ZY	644
PCO	3714	P5Y	342
PCO	6216	P5Y	665
PCO	6316 C	P5Y	663
PCO	6317 C	P5Y	664
PCO	6717	P5Y	667
PCO	6939	P5Y	661
PCO	7948	P5Y	758
PCO	7949	P5Y	768
PEL	1041 L	PL	168
PEL	1111	PL	153
PEL	1121	PL	158
PLE	1141	PL	151
PEL	1166 L	PL	164
PEL	1211	PL	160
PEL	1321	PL	166
PEL	1341	PL	165
PEL	1346	PL	152
PEL	1421 L	PL	159
PEL	1441	PL	125
PEL	1511	PL	119
PEL	1521 L	PL	132
PEL	1541	PL	120
PEL	1571	PL	118
PEL	1621	PL	111
PEL	1646	PL	115
PEL	2112	PL	253
PEL	2122	PL	258
PEL	2142	PL	251
PEL	2342	PL	265
PEL	2347	PL	252
PEL	2422 L	PL	259
PEL	2512 L	PL	219
PEM	1012	PL	110
PEM	1100	PL	101
PEM	1102	PL	112
PEM	1121 L	PL	121
PEM	1131	PL	123
PEM	1146	PL	130
PEM	1201	PL	117
PEM	1301	PL	122
PEM	1351 L	PL	133
PEM	1421 L	PL	124
PEM	1431 L	PL	126
PEM	1441 L	PL	127
PEM	1461 L	PL	131
PEM	2202	PL	217
PEM	2405 L	PL	232
PEM	2462 L	PL	231
PEN	1121	PL	161
PEN	1136 C	PL	163
PEN	1151	PL	167
PEN	1171 L	PL	128
PEN	1251 L	PL	162
PEN	2113	PL	263
PEN	2122	PL	261
PEN	2141	PL	262
PEN	2231 L	PL	254
PEO	1011 C	PHR	100
PEO	1511 C	PHR	111
PEO	1521	PHR	102
PEO	2031 C	PHR	220
PEO	2032	PHR	221
PEO	2121 C	PHR	224
PEO	2341 C	PHR	225
PEO	2561	PHR	209
PEO	3041 C	PHR	378
PEO	3124	PHR	324
PEO	3219 C	PHR	304
PEO	3323	PHR	314
PEO	3324	PHR	308
PEO	3344	PHR	325
PEO	3514	PHR	311
PEO	3621 C	PHR	312
PEO	3623	PHR	315
PEO	3624	PHR	302
PEO	3644 C	PHR	301
PEP	1301 C	PHR	113
PEP	2201 C	PHR	217
PEP	2401	PHR	211
PEP	2421 C	PHR	205
PEP	3203 C	PHR	377
PEP	3204 C	PHR	327
PEP	3304	PHR	323
PEP	3424	PHR	307
PEQ	1121 C	PHR	126
PEQ	2115	PL	264
PEQ	2126 C	PL	270
PEQ	2141 L	PHR	226
PEQ	3109	PL	305
PEQ	3124 C	PHR	326
PET	3000	PHR	371
PET	3127	PHR	374
PET	3212	PHR	372
PET	3230	PHR	370
PET	3251	PL	303
PET	3254	PL	300
PET	3320 C	PHR	365
PET	3340 C	PHR	367
PET	3350 C	PHR	366
PET	3360	PHR	368
PET	3430	PHR	376
PET	3461 C	PHR	373
PET	3590	PHR	300
PET	3640 C	PHR	375
PET	3940	PHR	305
PET	3944	PHR	306
PET	4410	PHR	471
PET	4416	PHR	420
PET	4442 C	PHR	473
PET	4510	PHR	484
PET	4905 C	PHR	496
PET	4941 C	PHR	474
PET	4943	PHR	400
PET	4948	PHR	497
PET	6015	PHR	601
PET	6145	PHR	633
PET	6235 C	PHR	603
PET	6346 C	PHR	665
PET	6365 C	PHR	612
PET	6368 L	PHR	613
PET	6416	PHR	620
PET	6425	PHR	616
PET	6445	PHR	618
PET	6515 C	PHR	610
PET	6905	PHR	696
PET	6910	PHR	697
PET	6925	PHR	645
PET	6932	PHR	607
PET	6940 L	PHR	698
PET	6971 L	PHR	699
PHA	3050	PHY	300
PHA	3110 C	PHY	301
PHA	3111 C	PHY	303
PHA	3112 C	PHY	307
PHA	3500 C	PHY	361
PHA	3501 C	PHY	363
PHA	3630 C	PHY	315
PHA	4103 C	PHY	490
PHA	4106 C	PHY	498
PHA	4120	PHY	403
PHA	4140 C	PHY	407
PHA	4150	PHY	480
PHA	4202	PHY	473
PHA	4211	PHY	474
PHA	4232	PHY	453
PHA	4350	PCY	461
PHA	4411	PCY	445
PHA	4412 L	PCY	447
PHA	4413	PCY	421
PHA	4435	PCY	455
PHA	4436	PCY	456
PHA	4437	PCY	457
PHA	4438	PCY	464
PHA	4439	PCY	465
PHA	4506	PHY	482
PHA	4516	PLY	465
PHA	4517	PLY	491
PHA	4518	PLY	492
PHA	4600	PHY	401
PHA	4602	PHY	497
PHA	4631 C	PHY	415
PHA	4632 C	PHY	495
PHA	4660	PHY	487
PHA	4720	PHY	413
PHA	4735 C	PHY	429
PHA	4740	PHY	427
PHA	4750	PHY	463
PHA	4760	PHY	485
PHA	4765	PCY	451
PHA	4769	PHY	499
PHA	4821	PHY	423
PHA	4904	PLY	454
PHA	4905 C	PHY	496
PHA	4905 L	PCY	496
PHA	4930	PHY	471
PHA	5508	PHY	552
PHA	5601	PHY	560
PHA	5605	PHY	627
PHA	5680	PHY	567
PHA	5681	PHY	568
PHA	5682	PHY	569
PHA	5683	PHY	571
PHA	5684	PHY	572
PHA	5685	PHY	570
PHA	5762 C	PHY	566
PHA	6107 C	PHY	653
PHA	6115	PHY	604
PHA	6116	PHY	605
PHA	6125	PHY	606
PHA	6146 C	PHY	643
PHA	6147 C	PHY	645
PHA	6148 C	PHY	647
PHA	6155	PHY	611
PHA	6225	PHY	601
PHA	6235	PHY	631
PHA	6236	PHY	633
PHA	6237	PHY	635
PHA	6354	PCY	621
PHA	6355	PCY	622
PHA	6356	PCY	625
PHA	6357 L	PCY	623
PHA	6358 L	PCY	624
PHA	6365 C	PCY	617
PHA	6367 L	PCY	618
PHA	6375 C	PCY	619
PHA	6416	PCY	631
PHA	6417	PCY	632
PHA	6418	PCY	633
PHA	6445	PCY	642
PHA	6470	PCY	611
PHA	6471	PCY	612
PHA	6472 L	PCY	613
PHA	6473 L	PCY	614
PHA	6474	PCY	615
PHA	6606	PHY	655
PHA	6607	PHY	656
PHA	6608	PHY	657
PHA	6790	PHY	621
PHA	6905 L	PHY	696
PHA	6905 C	PCY	696
PHA	6910	PHY	697
PHA	6910 L	PCY	697
PHA	6934	PCY	607
PHA	6935	PHY	602
PHA	6936	PHY	607
PHA	6937	PHY	637

TABLE 1

PHA	6940	PHY	698
PHA	6940	PCY	698
PHA	6971	PHY	699
PHA	6971 L	PCY	699
PHA	7980	PHY	799
PHA	7980 L	PCY	799
PHH	3100	PPY	311
PHH	3200	PPY	312
PHH	3400	PPY	313
PHH	3440	PPY	314
PHH	3620	PPY	319
PHH	3621	PPY	320
PHH	3640	PPY	327
PHH	3641	PPY	328
PHH	4130	PPY	415
PHH	4205	PPY	419
PHH	4401	PPY	424
PHH	4500	PPY	426
PHH	4703	PPY	427
PHH	5135	PPY	515
PHH	5206	PPY	519
PHH	5406	PPY	524
PHH	5505	PPY	526
PHH	5645	PPY	528
PHH	5646	PPY	529
PHH	6069	PPY	617
PHH	6106	PPY	616
PHH	6405	PPY	624
PHH	6509	PPY	626
PHH	6649	PPY	629
PHI	2010	PPY	201
PHI	2100	PPY	200
PHI	2403	PPY	232
PHI	2630	PPY	231
PHI	2930	PPY	209
PHI	3130	PPY	330
PHI	3300	PPY	341
PHI	3320	PPY	343
PHI	3400	PPY	357
PHI	3420	PPY	358
PHI	3451	PPY	359
PHI	3650	PPY	350
PHI	3700	PPY	380
PHI	3700	RN	380
PHI	3760	PPY	382
PHI	3800	PPY	370
PHI	3930	PPY	309
PHI	4131	PPY	430
PHI	4227	PPY	456
PHI	4341	PPY	428
PHI	4360	PPY	441
PHI	4404	PPY	457
PHI	4540	PPY	442
PHI	4633	PPY	403
PHI	4680	PPY	450
PHI	4764	PPY	480
PHI	4801	PPY	470
PHI	4905	PPY	496
PHI	4912	PPY	495
PHI	4930	PPY	409
PHI	5136	PPY	530
PHI	5225	PPY	556
PHI	5225	LIN	556
PHI	5365	PPY	541
PHI	5405	PPY	557
PHI	5505	PPY	542
PHI	5685	PPY	550
PHI	5705	PPY	580
PHI	5807	PPY	570
PHI	5905	PPY	596
PHI	5934	PPY	509
PHI	6105	PPY	630
PHI	6325	PPY	643
PHI	6426	PPY	665
PHI	6456	PPY	659
PHI	6686	PPY	650
PHI	6806	PPY	670
PHI	6905	PPY	696
PHI	6910	PPY	697
PHI	6934	PPY	609
PHI	6940	PPY	698
PHI	6971	PPY	699
PHI	7980	PPY	799
PHM	3201	PPY	365
PHM	3202	PPY	361
PHM	3224	PPY	304
PHM	3400	PPY	366
PHM	3500	PPY	360
PHM	4440	PPY	466
PHM	4501	PPY	460
PHM	4700	PPY	465
PHM	5505	PPY	560
PHM	5520	PPY	565
PHP	3765	PPY	363
PHP	3780	PPY	318
PHP	3786	PPY	329
PHP	4000	PPY	416
PHP	4010	PPY	417
PHP	4410	PPY	425
PHP	4782	PPY	429
PHP	4784	PPY	446
PHP	5005	PPY	516
PHP	5015	PPY	517
PHP	5415	PPY	525
PHP	5781	PPY	527
PHP	5785	PPY	546
PHP	6419	PPY	625
PHP	6783	PPY	628
PHP	6785	PPY	646
PHS	2102	PS	235
PHS	2103	PS	236
PHS	2104	PS	237
PHS	2802	PS	283
PHS	4303	PS	460
PHS	4330 L	PS	465
PHS	4805	PS	485
PHS	5204	PS	542
PHS	5304	PS	560
PHS	5331 L	PS	566
PHS	5354	PS	570
PHS	5404	PS	550
PHS	6156	PS	681
PHS	6209	PS	642
PHS	6225	PS	647
PHS	6226	PS	648
PHS	6227	PS	649
PHS	6247	PS	629
PHS	6326	PS	661
PHS	6336	PS	662
PHS	6337	PS	663
PHS	6391	PS	660
PHS	6493	PS	685
PHS	6606	PS	603
PHS	6606	ATY	603
PHS	6616	PS	604
PHS	6616	ATY	604
PHS	7228	PS	756
PHS	7229	PS	757
PHS	7236	PS	741
PHS	7237	PS	742
PHS	7327	PS	764
PHS	7357	PS	771
PHS	7358	PS	772
PHS	7426	PS	753
PHS	7427	PS	754
PHS	7428	PS	755
PHT	3001	PHT	301
PHT	3100 C	PHT	332
PHT	3213 C	PHT	311
PHT	3214 C	PHT	312
PHT	3215 C	PHT	351
PHT	3500	PHT	361
PHT	3803	PHT	391
PHT	3812	PHT	392
PHT	3813	PHT	393
PHT	4111 L	PHT	433
PHT	4232 C	PHT	412
PHT	4234 C	PHT	411
PHT	4245	PHT	444
PHT	4331 C	PHT	435
PHT	4822	PHT	491
PHT	4823	PHT	492
PHT	4824	PHT	499
PHT	4930	PHT	461
PHY	1001 C	PS	120
PHY	2002 C	PS	201
PHY	2003 C	PS	202
PHY	2032	PS	200
PHY	2032 L	PS	220
PHY	2040	PS	215
PHY	2040 L	PS	225
PHY	2041	PS	216
PHY	2041 L	PS	226
PHY	2042	PS	217
PHY	2042 L	PS	227
PHY	2050	PS	211
PHY	2050 L	PS	221
PHY	2051	PS	212
PHY	2051 L	PS	222
PHY	2052	PS	213
PHY	2052 L	PS	223
PHY	2063 C	PS	285
PHY	2064 C	PS	286
PHY	2065 C	PS	287
PHY	3018	PS	333
PHY	3036	PS	391
PHY	3123	PS	340
PHY	3223	PS	300
PHY	3323	PS	310
PHY	3423	PS	330
PHY	3905	PS	396
PHY	4124	PS	440
PHY	4224	PS	400
PHY	4324	PS	410
PHY	4424	PS	430
PHY	4454 L	PS	435
PHY	4523	PS	420
PHY	4712 L	PS	415
PHY	4822 L	PS	445
PHY	4905	PS	496
PHY	4910 L	PS	491
PHY	4930	PS	492
PHY	5225	PS	500
PHY	5325	PS	510
PHY	5445	PS	530
PHY	5524	PS	520
PHY	5624	PS	541
PHY	5722 C	PS	515
PHY	5723 C	PS	516
PHY	5905	PS	596
PHY	6077	PS	616
PHY	6078	PS	615
PHY	6246	PS	601
PHY	6346	PS	611
PHY	6347	PS	612
PHY	6536	PS	621
PHY	6537	PS	622
PHY	6556	PS	682
PHY	6645	PS	643
PHY	6646	PS	644
PHY	6647	PS	645
PHY	6648	PS	671
PHY	6668	PS	672
PHY	6905	PS	696
PHY	6910	PS	697
PHY	6920	PS	695
PHY	6935	PS	680
PHY	6940	PS	698
PHY	6971	PS	699
PHY	7097	PS	781
PHY	7098	PS	782
PHY	7247	PS	703
PHY	7348	PS	713
PHY	7538	PS	722
PHY	7539	PS	723
PHY	7939	PS	790
PHY	7980	PS	799
PLP	3002	PT	301
PLP	3003 L	PT	311
PLP	3004 L	PT	313
PLP	4102 L	PT	402
PLP	4905	PT	496
PLP	4931	PT	450
PLP	5032 L	PT	501
PLP	5053 L	PT	541
PLP	6223	PT	611
PLP	6224	PT	612
PLP	6241	PT	621
PLP	6262	PT	623
PLP	6281	PT	691
PLP	6291	PT	692
PLP	6303	PT	625
PLP	6402	PT	627
PLP	6502	PT	629
PLP	6905	PT	696
PLP	6910	PT	697
PLP	6921	PT	600
PLP	6931	PT	650
PLP	6940	PT	698
PLP	6971	PT	699
PLP	7980	PT	799
PLS	2031	PLS	201
PLS	2201	PLS	211
PLS	3221	PLS	301

PLS	3221 L	PLS	311
PLS	3401	PLS	302
PLS	4601	PLS	442
PLS	4613	AY	444
PLS	4701	PLS	452
PLS	6623	AY	656
PLW	4102	POL	427
PLW	4905	POL	496
PMA	3010	PM	313
PMA	3931	PM	321
PMA	3941	PM	340
PMA	4401	PM	435
PMA	4402 L	PM	436
POL	1120	POL	133
POL	1121	POL	134
POL	1122	POL	135
POL	1130	POL	136
POL	2210	POL	202
POR	1120	PE	133
POL	1121	POL	134
POL	1122	POL	135
POL	4905	POL	496
POR	1120	PE	133
POR	1121	PE	134
POR	1122	PE	135
POR	3130	PE	301
POR	3240	PE	304
POR	3241	PE	305
POR	4770	PE	404
POS	2041	PCL	201
POS	2112	PCL	220
POS	3002	PCL	316
POS	3122	PCL	329
POS	3142	PCL	325
POS	3173	PCL	333
POS	3204	PCL	317
POS	3233	PCL	322
POS	3253	PCL	318
POS	3263	PCL	315
POS	3273	PCL	339
POS	3413	PCL	321
POS	3443	PCL	320
POS	3606	PCL	335
POS	4246	PCL	428
POS	4284	PCL	416
POS	4424	PCL	422
POS	4603	PCL	401
POS	4604	PCL	402
POS	4624	PCL	403
POS	4684	PCL	417
POS	4691	PCL	418
POS	4905	PCL	496
POS	4925	PCL	489
POS	4930	PCL	430
POS	4932	PCL	455
POS	4936	PCL	450
POS	4936	PCL	458
POS	4936	PCL	457
POS	4936	PCL	456
POS	5247	PCL	550
POS	5425	PCL	517
POS	5685	PCL	516
POS	5692	PCL	557
POS	5905	PCL	596
POS	5933	PCL	530
POS	6045	PCL	653
POS	6127	PCL	654
POS	6157	PCL	652
POS	6447	PCL	655
POS	6617	PCL	639
POS	6706	PCL	601
POS	6717	PCL	629
POS	6727	PCL	621
POS	6736	PCL	613
POS	6747	PCL	618
POS	6757	PCL	615
POS	6905	PCL	696
POS	6910	PCL	697
POS	6934	PCL	630
POS	6940	PCL	698
PCL	6946	PCL	607
POS	6971	PCL	699
POS	7980	PCL	799
POT	2001	PCL	203
POT	3314	PCL	365
POT	4013	PCL	407
POT	4044	PCL	408
POT	4054	PCL	409
POT	4064	PCL	466
POT	4414	PCL	410
POT	6017	PCL	616
POT	6027	PCL	617
POT	6087	PCL	620
POT	6207	PCL	619
POT	6611	PCL	609
POW	3100	PE	327
POW	3130	PE	328
POW	3131	PE	329
POW	4700	PE	451
POW	4710	PE	452
POW	4905	PE	496
POW	6275	PE	651
POW	6276	PE	652
POW	6385	PE	653
POW	6386	PE	654
POW	6400	PE	660
POW	6930	PE	600
PPE	3004	PSY	345
PPE	4055	PSY	443
PPE	4104	PSY	442
PPE	4324 C	PSY	444
PPE	4445	PSY	441
PPE	4605	PSY	440
PPE	4606	PSY	446
PPE	6059	PSY	640
PPE	6098	PSY	684
PPE	6209	PSY	649
PPE	6307	PSY	644
PPE	6308	PSY	645
PPE	6327	PSY	641
PPE	6667	PSY	647
PPE	7288	PSY	740
PPE	7309	PSY	745
PPE	7947	PSY	749
PRT	2490	PE	250
PSB	3004	PSY	371
PSB	4003	PSY	471
PSB	4104 L	PSY	472
PSB	4934	PSY	479
PSB	5065	PSY	575
PSB	5115 C	PSY	572
PSB	5325	PSY	579
PSB	5445	PSY	570
PSB	5465	PSY	574
PSB	5505	PSY	580
PSB	5935	PSY	573
PSB	6067	PSY	674
PSB	6076	PSY	682
PSB	6086	PSY	672
PSB	6087	PSY	673
PSB	6607	PSY	670
PSB	6607	ZY	637
PSB	6609	PSY	671
PSB	6627	PSY	631
PSB	7069	PSY	744
PSB	7079	PSY	779
PSB	7118	PSY	772
PSB	7248	PSY	775
PSB	7249	PSY	773
PSB	7719	PSY	770
PSB	7817	PSY	776
PSC	1420	CPS	135
PSC	1502	CPS	123
PSC	1510	CPS	125
PSC	2121	CPS	235
PSC	2191 L	CPS	264
PSC	2501	CPS	223
PSC	2507	CPS	292
PSC	2701	CPS	231
PSC	2707	CPS	293
PSC	2901	CPS	291
PSC	2936	CPS	251
PSC	3402	CPS	342
PSC	3900	CPS	311
PSE	3211 C	PY	312
PSE	4223	PY	415
PSE	4311	PY	422
PSE	4411 C	PY	414
PSE	4611	PY	453
PSE	4949	PY	400
PSE	6227	PY	631
PSE	6415	PY	614
PSE	6522	PY	612
PSE	6614	PY	653
PSE	6905	PY	696
PSE	6910	PY	697
PSE	6931	PY	607
PSE	6938	PY	660
PSE	6940	PY	698
PSE	6971	PY	699
PSY	2013	PSY	201
PSY	3912	PSY	399
PSY	4039	PSY	491
PSY	4049	PSY	492
PSY	4315	PSY	447
PSY	4905	PSY	496
PSY	4970	PSY	498
PSY	5605	PSY	594
PSY	6268	PSY	646
PSY	6328	PSY	648
PSY	6508	PSY	633
PSY	6698	PSY	694
PSY	6905	PSY	696
PSY	6910	PSY	697
PSY	6939	PSY	639
PSY	6940	PSY	698
PSY	6971	PSY	699
PSY	7980	PSY	799
PUP	2002	PCL	221
PUP	3204	PCL	323
PUP	3323	PCL	319
PUP	4003	PCL	412
PUP	4104	PCL	424
PUP	4313	PCL	419
PUP	4404	PCL	427
PUP	5105	PCL	555
PUP	5405	PCL	551
PUR	3101	PR	340
PUR	4000	PR	414
PUR	4001	PR	415
PUR	4103	PR	425
PUR	4402	PR	402
PUR	4930	PR	496
PUR	4931	PR	431
PUR	4932	PR	490
PUR	4933	PR	461
PUR	4949	PR	499
PUR	4949	CEP	499
PUR	6934	COM	614
QMB	3700	BA	300
QMB	4701	MGT	470
QMB	4702	MGT	471
QMB	4703	MGT	472
QMB	6607	MGT	671
QMB	6697	MGT	672
QMB	6808	MGT	677
QMB	6809	MGT	678
QMB	6827	MGT	670
QMB	6837	MGT	676
QMB	6857	MGT	673
QMB	6865	MGT	674
QMB	6877	MGT	675
RED	4147	ED	480
RED	5310	ED	560
RED	5337	ED	562
RED	5355	ED	561
RED	6247	ED	685
RED	6380	EH	616
RED	6447	ED	686
RED	6448	ED	687
RED	6480	EH	617
RED	6548	ED	680
RED	6646	ED	684
RED	6656	ED	683
RED	6667	ED	688
RED	6805	ED	681
RED	7747	ED	762
RED	7816	ED	759
RED	7819	ED	757
RED	7848	ED	758
RED	7938	ED	761
RED	7947	ED	763
REE	3043	RE	350
REE	3720	RE	340
REE	4100	RE	450
REE	4204	RE	480
REE	4310	RE	460
REE	4430	RE	440
REE	4704	RE	470
REE	4905	RE	496
REE	4934	RE	498
REE	6286	RE	680
REE	6305	RE	650
REE	6395	RE	660

TABLE 1

REE	6609	RE	640	RTV	4500	BR	425	SOC	6312	SY	652
REE	6756	RE	670	RTV	4905	BR	496	SOC	6314	SY	653
REE	6905	RE	696	RTV	4931	BR	460	SOC	6315	SY	651
REE	6910	RE	697	RTV	4930	BR	490	SOC	6321	SY	658
REE	6936	RE	690	RTV	4949	CEP	499	SOC	6335	SY	665
REE	6940	RE	698	RTV	6503	COM	623	SOC	6336	SY	664
REE	6971	RE	699	RTV	6601	COM	628	SOC	6337	SY	695
REE	7920	RE	790	RTV	6801	COM	603	SOC	6415	SY	622
REE	7980	RE	799	RUS	1120	RSN	133	SOC	6426	SY	629
REL	2010	RN	251	RUS	1121	RSN	134	SOC	6435	SY	682
REL	3116	RN	365	RUS	1122	RSN	135	SOC	6466	SY	663
REL	3121	RN	357	RUS	2200	RSN	202	SOC	6501	SY	642
REL	3121	RN	357	RUS	3240	RSN	304	SOC	6502	SY	643
REL	3122	RN	358	RUS	4300	RSN	406	SOC	6506	SY	648
REL	3130	RN	374	RUS	4700	RSN	413	SOC	6616	SY	606
REL	3140	RN	373	RUS	4840	RSN	412	SOC	6625	SY	660
REL	3158	RN	378	RUS	4905	RSN	496	SOC	6630	SY	607
REL	3172	RN	371	RUS	5301	RSN	506	SOC	6646	SY	603
REL	3202	RN	340	RUS	5701	RSN	513	SOC	6647	SY	605
REL	3210	RN	341	RUS	5845	RSN	512	SOC	6748	SY	691
REL	3244	RN	343	RUT	2110	RSN	250	SOC	6808	SY	680
REL	3245	RN	344	RUW	4100	RSN	427	SOC	6827	SY	608
REL	3321	RN	323	RUW	4101	RSN	428	SOC	6832	SY	683
REL	3322	RN	326	RUW	5120	RSN	527	SOC	6855	SY	681
REL	3330	RN	322	RUW	5121	RSN	528	SOC	6909	SY	696
REL	3331	RN	346	RUW	5905	RSN	596	SOC	6910	SY	697
REL	3340	RN	321	SCE	4330	EDS	464	SOC	6940	SY	698
REL	3341	RN	345	SCE	5115	EDE	560	SOC	6971	SY	699
REL	3342	RN	381	SCE	6117	EDE	660	SOC	7285	SY	725
REL	3420	RN	364	SCE	6140	ED	646	SOC	7503	SY	749
REL	3440	RN	362	SCE	6237	EDS	660	SOC	7657	SY	701
REL	3492	RN	375	SCE	6736	EDS	661	SOC	7933	SY	798
REL	3494	RN	360	SCE	6947	EDS	662	SOC	7935	SY	797
REL	3495	RN	361	SCE	7238	EDS	761	SOC	7980	SY	799
REL	3500	RN	353	SCE	7933	ED	760	SOP	3004	PSY	313
REL	3600	RN	330	SCE	7949	EDS	762	SOP	3742	PSY	347
REL	3611	RN	351	SED	4335	SCH	419	SOP	4214 C	PSY	410
REL	3612	RN	352	SED	5340	SCH	503	SOP	4334	PSY	415
REL	3620	RN	382	SED	5372	SCH	517	SOP	4404	PSY	414
REL	3630	RN	347	SED	6930	SCH	619	SOP	4513	PSY	412
REL	3695	RN	383	SED	6940	SCH	698	SOP	4524	PSY	413
REL	4112	RN	457	SED	6943	ASC	643	SOP	4704	PSY	411
REL	4120	RN	458	SED	6943	ASC	641	SOP	6069	PSY	611
REL	4134	RN	454	SED	6943	ASC	642	SOP	6079	PSY	612
REL	4143	RN	456	SOC	2000	SY	201	SOP	6099	PSY	681
REL	4144	RN	473	SOC	2020	SY	202	SOP	6116	PSY	613
REL	4156	RN	478	SOC	3022	SY	322	SOP	6218 C	PSY	617
REL	4177	RN	471	SOC	3300	SY	321	SOP	6219 C	PSY	618
REL	4291	RN	443	SOC	3310	SY	350	SOP	6709	PSY	616
REL	4294	RN	441	SOC	3320	SY	355	SOP	7318	PSY	718
REL	4304	RN	401	SOC	3331	SY	360	SOP	7319	PSY	710
REL	4333	RN	422	SOC	3745	SY	391	SOP	7319	PSY	711
REL	4346	RN	426	SOC	3830	SY	380	SOP	7339	PSY	719
REL	4347	RN	421	SOC	4001	SY	404	SOS	3003	SLS	312
REL	4390	RN	403	SOC	4040	SY	498	SOS	3007	SLS	325
REL	4460	RN	405	SOC	4130	SY	487	SOS	3022 C	SLS	330
REL	4462	RN	450	SOC	4150	SY	486	SOS	3215 C	SLS	333
REL	4407	RN	407	SOC	4211	SY	425	SOS	4115	SLS	426
REL	4690	RN	482	SOC	4211	RN	425	SOS	4303	SLS	422
REL	4905	RN	496	SOC	4230	SY	414	SOS	4404 C	SLS	421
REL	4933	RN	487	SOC	4241	SY	413	SOS	4602	SLS	424
RMI	3015	FI	360	SOC	4243	SY	419	SOS	4715	SLS	423
RMI	3105	FI	363	SOC	4410	SY	422	SOS	4718	SLS	437
RMI	3206	FI	365	SOC	4422	SY	429	SOS	4732	SLS	428
RMI	3207	FI	366	SOC	4432	SY	482	SOS	4905	SLS	496
RMI	3215	FI	362	SOC	4462	SY	463	SOS	4941	SLS	400
RMI	3217	FI	361	SOC	4500	SY	442	SOS	5132	SLS	525
RMI	4120	FI	464	SOC	4620	SY	460	SOS	6136	SLS	626
RMI	4135	FI	462	SOC	4640	SY	403	SOS	6233	SLS	630
RMI	4305	FI	487	SOC	4720	SY	494	SOS	6233	FRC	630
RMI	4506	FI	463	SOC	4831	SY	483	SOS	6323	SLS	622
RMI	4805	FI	486	SOC	4850	SY	481	SOS	6325 L	SLS	632
RMI	4905	FI	496	SOC	4905	SY	496	SOS	6414	SLS	621
RMI	6195	FI	662	SOC	4931	SY	485	SOS	6418	SLS	636
RMI	6296	FI	665	SOC	5905	SY	596	SOS	6424	SLS	627
RMI	6910	FI	697	SOC	5933	SY	598	SOS	6444	SLS	628
RMI	6936	FI	668	SOC	6050	SY	604	SOS	6454	SLS	631
RTV	2000	BR	212	SOC	6115	SY	685	SOS	6464	SLS	641
RTV	3100	BR	318	SOC	6135	SY	687	SOS	6622	SLS	624
RTV	3201	BR	326	SOC	6155	SY	686	SOS	6717	SLS	623
RTV	3210	BR	324	SOC	6175	SY	684	SOS	6752	SLS	637
RTV	3220	BR	325	SOC	6235	SY	614	SOS	6905	SLS	696
RTV	3300	BR	301	SOC	6236	SY	615	SOS	6910	SLS	697
RTV	3403	BR	302	SOC	6237	SY	616	SOS	6931	SLS	651
RTV	4101	BR	438	SOC	6238	SY	617	SOS	6932	SLS	600
RTV	4206	BR	426	SOC	6244	SY	619	SOS	6940	SLS	698
RTV	4302	BR	436	SOC	6246	SY	613	SOS	6971	SLS	699
RTV	4311	BR	442	SOC	6247	SY	618	SOS	7980	SLS	799

SOW	3001	SY	311	SPC	3440	SCH	301	SPW	6325	SH	686
SOW	3033	SY	312	SPC	3513	SCH	364	SPW	6337	SH	625
SPA	2013	SCH	280	SPC	3541	SCH	367	SPW	6366	SH	665
SPA	3001	SCH	304	SPC	3594	SCH	317	SPW	6400	SH	618
SPA	3011	SCH	385	SPC	3601	SCH	312	SPW	6401	SH	619
SPA	3101	SCH	386	SPC	3605	EH	392	SPW	6481	SH	650
SPA	3102	SCH	390	SPC	3680	EH	382	SPW	6575	SH	660
SPA	3105	SCH	391	SPC	3710	SCH	316	SPW	6602	SH	637
SPA	4051	SCH	440	SPC	3710 C	SSC	316	SPW	6705	SH	635
SPA	4052	SCH	441	SPC	4514	SCH	405	SPW	6729	SH	641
SPA	4053	SCH	460	SPC	4540	SCH	407	SPW	6765	SH	655
SPA	4054	SCH	461	SPC	4543	SCH	467	SPW	6806	SH	610
SPA	4118	SCH	492	SPC	4609	SCH	468	SPW	6902	SH	600
SPA	4121	SCH	491	SPC	4620	SCH	410	SPW	6905	SH	696
SPA	4200	SCH	450	SPC	4631	EH	405	SPW	6910	SH	697
SPA	4210	SCH	451	SPC	4931	SCH	498	SPW	6971	SH	699
SPA	4220	SCH	453	SPC	5148	SCH	582	SPW	7980	SH	799
SPA	4302	SCH	462	SPC	5149	SCH	581	SSE	4333	EDS	444
SPA	4362	SCH	474	SPC	5335	SCH	595	SSE	6117	EDE	620
SPA	4400	SCH	452	SPC	5610	SCH	510	SSE	6133	EDS	640
SPA	5111	SCH	562	SPC	5905	SCH	596	SSE	6377 C	EDS	642
SPA	5119	SCH	592	SPC	6218	SCH	613	SSE	6398	EDS	643
SPA	5122	SCH	591	SPC	6239	EH	683	SSE	7939	ED	710
SPA	5135	SCH	580	SPC	6253	SCH	610	SSI	2110	SSC	211
SPA	5202	SCH	540	SPC	6493	SCH	606	SSI	2114	SSC	291
SPA	5211	SCH	541	SPC	6545	SCH	615	SSI	2116	SSC	219
SPA	5223	SCH	543	SPC	6619	SCH	608	SSI	2120	SSC	221
SPA	5242	SCH	597	SPC	6682	SCH	605	SSI	2121	SSC	223
SPA	5304	SCH	560	SPC	6905	SCH	696	SSI	2122	SSC	222
SPA	5322	SCH	574	SPC	6910	SCH	697	SSI	2124	SSC	292
SPA	5403	SCH	542	SPC	6971	SCH	699	SSI	2126	SSC	229
SPA	5423	SCH	572	SPC	7190	SCH	780	SSI	2201	SSC	232
SPA	5553	SCH	549	SPC	7548	SCH	715	SSI	2221	SSC	231
SPA	6107	SCH	693	SPC	7937	SCH	701	SSI	2224	SSC	293
SPA	6120	SCH	691	SPC	7980	SCH	799	SSI	2226	SSC	239
SPA	6125	SCH	692	SPN	1100	SH	133	SSI	2935	SSC	251
SPA	6140	SCH	685	SPN	1110	SH	103	SSI	3127	SSC	352
SPA	6141	SCH	686	SPN	1111	SH	104	SSI	3227	SSC	353
SPA	6145	SCH	687	SPN	1112	SH	105	SSI	4601	ES	491
SPA	6146	SCH	688	SPN	1121	SH	134	SSI	4601	SY	491
SPA	6155	SCH	680	SPN	1122	SH	135	SSI	4601	HY	491
SPA	6204	SCH	640	SPN	2200	SH	202	SSI	4601	PCL	491
SPA	6206	SCH	650	SPN	2240	SH	204	SSI	4602	ES	492
SPA	6207	SCH	645	SPN	3300	SH	305	SSI	4602	PCL	492
SPA	6214	SCH	644	SPN	3301	SH	306	SSI	4602	HY	492
SPA	6215	SCH	641	SPN	3500	SH	330	SSI	4602	SY	492
SPA	6216	SCH	648	SPN	4420	SH	405	SSI	4603	SY	493
SPA	6226	SCH	643	SPN	4780	SH	404	SSI	4603	PCL	493
SPA	6227	SCH	646	SPN	4840	SH	412	SSI	4603	HY	493
SPA	6231	SCH	655	SPN	4850	SH	406	SSI	4603	ES	493
SPA	6245	SCH	657	SPN	4905	SH	496	STA	3013	STA	310
SPA	6305	SCH	662	SPN	5310	SH	505	STA	3023	STA	320
SPA	6313	SCH	660	SPN	5851	SH	506	STA	3024	STA	321
SPA	6314	SCH	663	SPN	6050	SH	602	STA	3032	STA	330
SPA	6318	SCH	664	SPN	6051	SH	603	STA	4033	STA	410
SPA	6327	SCH	670	SPN	6730	SH	606	STA	4173	STA	450
SPA	6345	SCH	661	SPN	6781	SH	604	STA	4202	STA	407
SPA	6364	SCH	671	SPN	6843	SH	612	STA	4203	STA	408
SPA	6407	SCH	642	SPN	6940	SH	698	STA	4204	STA	409
SPA	6410	SCH	656	SPT	2231	SH	251	STA	4222	STA	420
SPA	6411	SCH	651	SPT	2601	SH	250	STA	4321	STA	440
SPA	6435	SCH	654	SPW	6720	SH	685	STA	4322	STA	441
SPA	6445	SCH	647	SPW	3100	SH	327	STA	4404	STA	401
SPA	6521	SCH	649	SPW	3101	SH	328	STA	4603	ISE	474
SPA	6524	SCH	659	SPW	3102	SH	329	STA	4905	STA	496
SPA	6531	SCH	669	SPW	4130	SH	475	STA	4930	STA	490
SPA	6533	SCH	679	SPW	4131	SH	476	STA	5106	STA	523
SPA	6600	SCH	653	SPW	4132	SH	477	STA	5107	STA	524
SPA	6905	SCH	696	SPW	4215	SH	423	STA	6166	STA	602
SPA	6910	SCH	697	SPW	4265	SH	432	STA	6167	STA	603
SPA	6933	SCH	683	SPW	4280	SH	479	STA	6176	STA	635
SPA	6940	SCH	698	SPW	4310	SH	421	STA	6177	STA	636
SPA	6971	SCH	699	SPW	4315	SH	431	STA	6178	STA	637
SPA	7127	SCH	786	SPW	4335	SH	413	STA	6206	STA	607
SPA	7128	SCH	790	SPW	4480	SH	450	STA	6207	STA	608
SPA	7354	SCH	772	SPW	4604	SH	422	STA	6208	STA	609
SPA	7523	SCH	749	SPW	4725	SH	441	STA	6226	STA	622
SPA	7536	SCH	769	SPW	5135	SH	575	STA	6227	STA	624
SPA	7980	SCH	799	SPW	5136	SH	576	STA	6246	STA	619
SPC	2050	SCH	240	SPW	5137	SH	577	STA	6247	STA	621
SPC	2260	SCH	224	SPW	6216	SH	623	STA	6267	STA	652
SPC	2300	SCH	201	SPW	6237	SH	679	STA	6326	STA	610
SPC	2330	SCH	206	SPW	6245	SH	640	STA	6327	STA	611
SPC	3210	SCH	309	SPW	6269	SH	632	STA	6328	STA	612
SPC	3250	SCH	310	SPW	6285	SH	667	STA	6357	BA	664
SPC	3301	SCH	314	SPW	6286	SH	668	STA	6358	BA	665
SPC	3305	SCH	378	SPW	6313	SH	621	STA	6446	STA	640
SPC	3420	SCH	362	SPW	6319	SH	631	STA	6447	STA	641

TABLE 1

STA	6448	STA	642
STA	6526	STA	650
STA	6606	STA	676
STA	6707	STA	623
STA	6746	STA	670
STA	6747	STA	671
STA	6826	STA	660
STA	6827	STA	661
STA	6828	STA	662
STA	6857	STA	626
STA	6876	STA	680
STA	6877	STA	681
STA	6900	STA	628
STA	6905	STA	696
STA	6910	STA	697
STA	6934	STA	690
STA	6938	STA	691
STA	6940	STA	698
STA	6971	STA	699
STA	7346	STA	740
STA	7347	STA	741
STA	7348	STA	742
STA	7980	STA	799
STD	4151	CDP	403
STD	4905	CDP	496
SWA	1120	SI	133
SWA	1121	SI	134
SWA	1122	SI	135
SWA	3240	SI	304
SWA	4850	SI	406
SWT	3110	SI	338
THE	2000	THE	220
THE	4110	THE	428
THE	4111	THE	429
THE	4112	THE	430
THE	4730	THE	438
THE	4760	THE	439
THE	4905	THE	496
THE	4945	THE	424
THE	4949	THE	499
THE	5116	THE	528
THE	5117	THE	529
THE	5118	THE	530
THE	5949	THE	599
THE	6200	THE	636
THE	6203	THE	622
THE	6204	THE	623
THE	6230	THE	631
THE	6231	THE	632
THE	6232	THE	633
THE	6234	THE	635
THE	6285	THE	624
THE	6286	THE	625
THE	6287	THE	627
THE	6560	THE	628
THE	6561	THE	629
THE	6905	THE	696
THE	6910	THE	697
THE	6913	THE	638
THE	6940	THE	698
THE	6971	THE	699
THE	6972 C	THE	659
TPA	3010	THE	325
TPA	3200	THE	324
TPA	3220	THE	326
TPA	3250	THE	327
TPA	3270	THE	337
TPA	3290 L	THE	323
TPA	4024	THE	420
TPA	4047	THE	427
TPA	4062	THE	426
TPA	4230	THE	421
TPA	4231	THE	422
TPA	4232	THE	423
TPA	5048	THE	527
TPA	5084	THE	526
TPA	6023	THE	634
TPA	6085	THE	621
TPA	6087	THE	642
TPA	6219	THE	626
TPA	6275	THE	637
TPA	6935	THE	640
TPP	2700	THE	240
TPP	3110	THE	320
TPP	3111	THE	321
TPP	3112	THE	322
TPP	3310	THE	329
TPP	3311	THE	330
TPP	3510	THE	331
TPP	3511	THE	332
TPP	3650	THE	328
TPP	5192	THE	522
TPP	5294 L	THE	524
TPP	6193	THE	641
TPP	6234	THE	644
TPP	6921	THE	645
TPP	6934	THE	620
TTE	4007	CE	411
TTE	4104	CE	410
TTE	5006	CE	512
TTE	5105	CE	510
TTE	5215	CE	513
TTE	5257	CE	515
TTE	5701	CE	514
TTE	6106	CE	610
TTE	6107	CE	616
TTE	6256	CE	613
TTE	6267	CE	619
TTE	6306	CE	611
TTE	6307	CE	618
TTE	6516	CE	614
TTE	6526	CE	617
TTE	6606	CE	612
URP	4000	URP	402
URP	6061	URP	628
URP	6101	URP	602
URP	6102	URP	603
URP	6131	URP	622
URP	6132	URP	623
URP	6203	URP	681
URP	6231	URP	662
URP	6261	URP	626
URP	6301	URP	631
URP	6311	URP	632
URP	6312	URP	625
URP	6331	URP	633
URP	6341	URP	634
URP	6421	URP	682
URP	6700	URP	641
URP	6801	URP	671
URP	6802	URP	672
URP	6811	URP	624
URP	6821	URP	661
URP	6905	URP	696
URP	6910	URP	697
URP	6931	URP	601
URP	6940	URP	698
URP	6971	URP	699
URP	6979	URP	629
VEC	3100	VC	302
VEC	3200	VC	301
VEC	3224	VC	310
VEC	4225	VC	409
VEC	4226	VC	410
VEC	4410	VC	415
VEC	4432	VC	420
VEC	4452	VC	451
VEC	4905	VC	496
VEC	4941	VC	400
VEC	6251	HSC	650
VEM	5021	VM	581
VEM	5031	VM	576
VEM	5041	VM	575
VEM	5101 C	VM	539
VEM	5111 C	VM	545
VEM	5112 C	VM	546
VEM	5113 C	VM	541
VEM	5114 L	VM	564
VEM	5131	VM	540
VEM	5141 C	VM	560
VEM	5151 C	VM	554
VEM	5157 C	VM	542
VEM	5161 C	VM	562
VEM	5162 C	VM	558
VEM	5163 C	VM	559
VEM	5171 C	VM	566
VEM	5181 C	VM	544
VEM	5191	VM	577
VEM	5193	VM	585
VEM	5195	VM	586
VEM	5201 C	VM	543
VEM	5213 C	VM	547
VEM	5221 L	VM	590
VEM	5225	VM	565
VEM	5231	VM	589
VEM	5241 L	VM	592
VEM	5251 L	VM	567
VEM	5261 C	VM	599
VEM	5262	VM	598
VEM	5279 L	VM	552
VEM	5290 L	VM	553
VEM	5301 C	VM	570
VEM	5302 L	VM	571
VEM	5311	VM	583
VEM	5361 L	VM	582
VEM	5371 C	VM	579
VEM	5401 C	VM	572
VEM	5402 L	VM	584
VEM	5421 C	VM	594
VEM	5441 L	VM	563
VEM	5470	VM	568
VEM	5501 L	VM	573
VEM	5505 C	VM	587
VEM	5515 C	VM	597
VEM	5531 C	VM	538
VEM	5533 C	VM	561
VEM	5535 C	VM	569
VEM	5551	VM	596
VEM	5555	VM	588
VEM	5571	VM	580
VEM	5801 L	VM	523
VEM	5811 L	VM	524
VEM	5815 L	VM	525
VEM	5819 L	VM	526
VEM	5821 L	VM	509
VEM	5822 L	VM	521
VEM	5831 L	VM	513
VEM	5833 L	VM	505
VEM	5834 L	VM	516
VEM	5835 L	VM	503
VEM	5836 L	VM	514
VEM	5837 L	VM	501
VEM	5838 L	VM	557
VEM	5841 L	VM	504
VEM	5842 L	VM	515
VEM	5845 L	VM	502
VEM	5846 L	VM	517
VEM	5951 L	VM	508
VEM	5852 L	VM	556
VEM	5855 L	VM	507
VEM	5856 L	VM	522
VEM	5859 L	VM	520
VEM	5861 L	VM	506
VEM	5863 L	VM	527
VEM	5865 L	VM	529
VEM	5867 L	VM	535
VEM	5869 L	VM	533
VEM	5871 L	VM	534
VEM	5873 L	VM	536
VEM	5875 L	VM	532
VEM	5877 L	VM	528
VEM	5879 L	VM	510
VEM	5881 L	VM	530
VEM	5883 L	VM	511
VEM	5884 L	VM	518
VEM	5885 C	VM	519
VEM	5887 C	VM	531
VEM	5891 C	VM	512
VEM	5892 C	VM	537
VEM	5920	VM	555
VES	3202 C	VY	321
VES	4113	VY	441
VES	4131	VY	405
VES	4162	VY	401
VES	4611	VY	415
VES	5302	VY	562
VES	5303	VY	563
VES	6242 C	VY	622
VES	6243 C	VY	623
VES	6322	VY	624
VES	6342	VY	626
VES	6362	VY	663
VES	6402	VY	642
VES	6503	VY	602
VES	6602	VY	634
VES	6603	VY	635
VES	6651	VY	632
VES	6652	VY	633
VES	6761	VY	610
VES	6765	VY	682
VES	6905	VY	696
VES	6910	VY	697
VES	6931	VY	690
VES	6940	VY	698

VES	6971	VY	699
WIS	3401	FRC	353
WIS	4220	FRC	455
WIS	4443	FRC	437
WIS	4541	FRC	434
WOH	4220	HY	436
WST	3010	ASC	319
ZOO	2013 C	ZY	201
ZOO	2014	ZY	202
ZOO	3203 C	ZY	308
ZOO	3303 C	ZY	306
ZOO	3513 C	ZY	371
ZOO	3603	MCS	308
ZOO	3605 C	ZY	310
ZOO	3703 C	ZY	309
ZOO	3803 C	ZY	307
ZOO	4235 C	ZY	416
ZOO	4404 C	ZY	410
ZOO	4473 C	ZY	454
ZOO	4755 C	ZY	421
ZOO	4905	ZY	496
ZOO	4926	ZY	490
ZOO	4940	ZY	498
ZOO	5115 C	ZY	507
ZOO	5405 C	ZY	579
ZOO	6116 C	ZY	607
ZOO	6126	GY	666
ZOO	6126	ZY	666
ZOO	6126	BTY	666
ZOO	6126	APY	666
ZOO	6207 C	ZY	632
ZOO	6226	MCS	625
ZOO	6246 C	ZY	624
ZOO	6336 C	ZY	633
ZOO	6456 C	ZY	651
ZOO	6465	ZY	650
ZOO	6466 C	ZY	652
ZOO	6476 C	ZY	654
ZOO	6486 C	ZY	653
ZOO	6506 C	ZY	671
ZOO	6816	ZY	609
ZOO	6857 C	ZY	610
ZOO	6905	ZY	696
ZOO	6910	ZY	697
ZOO	6927	ZY	690
ZOO	6939	ZY	673
ZOO	6940	ZY	698
ZOO	6971	ZY	699
ZOO	7980	ZY	799

TABLE 2

HISTORICAL UNIVERSITY OF FLORIDA COURSE NUMBERS AND THEIR STATEWIDE COURSE NUMBERING EQUIVALENTS

HISTORICAL UNIVERSITY OF FLORIDA COURSE NUMBERS		STATEWIDE COURSE NUMBERING EQUIVALENTS	
ADP	311	ASG	3003
ADP	314	ASG	3403
ADP	315	ASG	3404
ADP	322	ASG	3313
ADP	407	ASG	4334
ADP	421	ASG	4931
ADP	422	ASG	4992
ADP	496	ASG	4905
ADP	535	ASG	5221
ADV	306	ADV	3000
ADV	402	ADV	4103
ADV	402	ADV	4600
ADV	407	ADV	4500
ADV	410	ADV	4101
ADV	411	ADV	4300
ADV	412	ADV	4800
ADV	415	ADV	4200
ADV	420	ADV	4102
ADV	431	ADV	4932
ADV	433	ADV	4400
ADV	450	ADV	4700
ADV	465	ADV	4931
ADV	490	ADV	4930
ADV	496	ADV	4905
ADV	499	ADV	4801
AE	112	ARC	1115 C
AE	113	ARC	1126 C
AE	115	ARC	1131 C
AE	121	ARC	1211
AE	235	ARC	2311 C
AE	236	ARC	2313 C
AE	245	ARC	2461
AE	255	ARC	2580
AE	333	ARC	3381 C
AE	335	ARC	3383 C
AE	346	ARC	3463 C
AE	355	ARC	3581 C
AE	356	ARC	3551 C
AE	364	ARC	3681 C
AE	366	ARC	3631 C
AE	375	ARC	3711
AE	385	ARC	3382 C
AE	396	ARC	3291 C
AE	435	ARC	4384 C
AE	436	ARC	4386 C
AE	442	ARC	4385 C
AE	445	ARC	4464 C
AE	465	ARC	4274
AE	467	ARC	4682 C
AE	475	ARC	4731
AE	476	ARC	4741
AE	552	ARC	5535
AE	561	ARC	5641
AE	571	ARC	5791
AE	572	ARC	5792
AE	581	ARC	5800
AE	582	ARC	5810
AE	583	ARC	5890
AE	584	ARC	5891
AE	601	ARC	6090
AE	621	ARC	6911
AE	622	ARC	6912
AE	623	ARC	6913
AE	628	ARC	6275
AE	629	ARC	6265
AE	631	ARC	6345 C
AE	632	ARC	6346 C
AE	633	ARC	6347 C
AE	634	ARC	6355 C
AE	635	ARC	6356 C
AE	651	ARC	6541
AE	652	ARC	6552
AE	653	ARC	6555
AE	654	ARC	6565
AE	655	ARC	6566
AE	656	ARC	6571
AE	657	ARC	6521
AE	658	ARC	6591
AE	659	ARC	6592
AE	660	ARC	6642
AE	661	ARC	6643
AE	662	ARC	6684
AE	663	ARC	6685
AE	664	ARC	6632
AE	665	ARC	6633
AE	666	ARC	6651
AE	667	ARC	6652
AE	668	ARC	6691
AE	669	ARC	6692
AE	671	ARC	6713
AE	672	ARC	6735
AE	673	ARC	6742
AE	674	ARC	6761
AE	675	ARC	6750
AE	676	ARC	6751
AE	677	ARC	6771
AE	678	ARC	6793
AE	681	ARC	6851
AE	682	ARC	6852
AE	683	ARC	6853
AE	684	ARC	6854 C
AE	685	ARC	6855 C
AE	686	ARC	6860
AE	697	ARC	6910
AE	698	ARC	6940
AE	699	ARC	6971
AED	301	AEE	3313
AED	321	AEE	3323
AED	324	AEE	3200
AED	400	AEE	4941
AED	407	AEE	4424
AED	419	AEE	4504
AED	421	AEE	4224
AED	423	AEE	4227
AED	428	AEE	4624
AED	439	AEE	4942
AED	440	AEE	4943
AED	496	AEE	4905
AED	601	AEE	6417
AED	604	AEE	6521
AED	605	AEE	6300
AED	620	AEE	6325
AED	621	AEE	6523
AED	622	AEE	6541
AED	624	AEE	6946
AED	625	AEE	6611
AED	626	AEE	6933
AED	627	AEE	6910
AED	696	AEE	6905
AED	697	AEE	6910
AED	698	AEE	6940
AED	699	AEE	6971
AG	180	AGG	1101
AG	200	AGG	2501
AG	420	AGG	4603
AGE	403	AGE	4932
AGE	404	AGE	4012
AGE	405	AGE	4023
AGE	410	AGE	4612
AGE	421	AGE	4312
AGE	426	AGE	4632
AGE	450	AGE	4212
AGE	451	AGE	4232
AGE	460	AGE	4112
AGE	461	AGE	4121
AGE	466	AGE	4142
AGE	475	AGE	4712
AGE	496	AGE	4905
AGE	499	AGE	4949
AGE	601	AGE	6931
AGE	602	AGE	6986
AGE	603	AGE	6031
AGE	671	AGE	6252
AGE	672	AGE	6152
AGE	673	AGE	6332
AGE	674	AGE	6442
AGE	691	AGE	6933
AGE	696	AGE	6905
AGE	697	AGE	6910
AGE	698	AGE	6940
AGE	699	AGE	6971
AL	201	ANS	2002
AL	309	ANS	3007
AL	334	ANS	3236
AL	340	ANS	3079
AL	400	ANS	4941
AL	411	ANS	4244
AL	413	ANS	4264
AL	414	ANS	4274
AL	415	ANS	4634 C
AL	423	ANS	4614
AL	429	ANS	4615
AL	434	ANS	4234 C
AL	440	ANS	4238
AL	451	ANS	4635
AL	527	ANS	5446
AL	601	ANS	6932
AL	602	ANS	6368
AL	604	ANS	6636
AL	605	ANS	6288
AL	607	ANS	6751
AL	650	ANS	6458
AL	651	ANS	6448
AL	652	ANS	6448 L
AL	653	ANS	6472
AL	654	ANS	6472 L
AL	655	ANS	6723
AL	656	ANS	6715
AL	657	ANS	6721
AL	658	ANS	6711
AL	659	ANS	6388
AL	660	ANS	6933
AL	664	AGR	6390
AL	696	ANS	6905
AL	697	ANS	6910
AL	698	ANS	6940
AL	699	ANS	6971
AL	799	ANS	7980
AMS	200	AMS	2030
AMS	355	AMH	3315
AMS	454	AMH	4041
AMS	455	AMH	4935

TABLE 2

AMS	496	AMS	4905	APY	662	ANT	6725	ART	622	ARH	6899
APY	200	ANT	2410	APY	666	ZOO	6126	ART	650	ART	6340 C
APY	202	ANT	2402	APY	667	ANT	6428	ART	651	ART	6927 C
APY	300	ANT	3141	APY	668	ANT	6447	ART	655	ARH	6791 C
APY	302	ANT	3511	APY	670	ANT	6478	ART	659	ART	6956
APY	310	LIN	3020	APY	675	ANT	6489	ART	697	ARH	6913
APY	370	ANT	3241	APY	690	ANT	6933	ART	697	ART	6910 C
APY	380	ANT	3302	APY	694	ANT	6945	ART	698	ART	6940
APY	400	ANT	4404	APY	695	ANT	6915	ART	699	ART	6971
APY	401	ANT	4185	APY	696	ANT	6905	ART	699	ARH	6971
APY	404	ANT	4426	APY	697	ANT	6910	AS	232	HUM	2410
APY	405	ANT	4451	APY	698	ANT	6940	AS	281	ASN	2001
APY	407	ANT	4433	APY	699	ANT	6971	AS	483	ASN	4935
APY	410	ANT	4332	APY	799	ANT	7980	ASC	150	IDS	1920
APY	417	ANT	4476	ART	101	ART	1201 C	ASC	180	IDS	1120
APY	421	ANT	4124	ART	102	ART	1203 C	ASC	181	HSC	1005
APY	425	ANT	4274	ART	103	ART	1300 C	ASC	201	AFA	2000
APY	434	ANT	4442	ART	104	ART	1301 C	ASC	202	AFS	2002
APY	435	ANT	4304	ART	205	ART	2205 C	ASC	210	IDS	2180
APY	437	ANT	4153	ART	206	ART	2302 C	ASC	301	IDS	3181
APY	438	ANT	4312	ART	207	ARH	2050	ASC	319	WST	3010
APY	439	ANT	4158	ART	208	ARH	2051	ASC	401	IDS	4182
APY	441	ANT	4326	ART	209	ARH	2052	ASC	402	IDS	4183
APY	443	ANT	4352	ART	210	ART	2001 C	ASC	404	COC	4400
APY	450	ANT	4255	ART	260	ART	2280 C	ASC	440	IDS	4925
APY	471	ANT	4552	ART	280	ART	2110 C	ASC	450	AFS	4935
APY	472	ANT	4555	ART	303	ART	3830	ASC	453	AFA	4936
APY	473	ANT	4525	ART	309	ARH	3800	ASC	454	AFA	4937
APY	475	ANT	4586	ART	314	ARH	3510	ASC	460	EUS	4935
APY	480	ANT	4403	ART	316	ARH	3130	ASC	461	IDS	4122
APY	482	ANT	4035	ART	317	ARH	3171	ASC	462	IDS	4125
APY	483	ANT	4036	ART	318	ARH	3200	ASC	471	HCA	4410 L
APY	490	ANT	4930	ART	321	ARH	3541	ASC	472	HCA	4102
APY	495	ANT	4907	ART	322	ARH	3542	ASC	473	HUM	4563
APY	496	ANT	4905	ART	323	ARH	3530	ASC	474	HUM	4564
APY	498	ANT	4914	ART	324	ARH	3613	ASC	475	EGN	4834
APY	502	ANT	5423	ART	325	ARH	3650	ASC	476	EAS	4933
APY	505	ANT	5621	ART	327	ARH	3520	ASC	477	EAS	4933
APY	506	ANT	5625	ART	328	ARH	3605	ASC	478	EAS	4933
APY	510	ANT	5466	ART	329	ARH	3614	ASC	480	IDS	4940
APY	511	ANT	5622	ART	341	ART	3600 C	ASC	487	IDS	4938
APY	512	ANT	5266	ART	342	ART	3601 C	ASC	496	IDS	4905
APY	513	ANT	5246	ART	345	ART	3605 C	ASC	498	IDS	4906
APY	517	ANT	5479	ART	346	ART	3606 C	ASC	600	OMT	6631
APY	518	ANT	5477	ART	350	ART	3310 C	ASC	641	SED	6943
APY	520	ANT	5376	ART	351	ART	3311 C	ASC	642	SED	6943
APY	521	ANT	5366	ART	353	ART	3510 C	ASC	643	SED	6943
APY	531	ANT	5623	ART	354	ART	3520 C	ASE	100	AES	1930
APY	540	ANT	5338	ART	355	ART	3400 C	ASE	305	EAS	3001
APY	542	ANT	5336	ART	356	ART	3401 C	ASE	400	EAS	4105
APY	543	ANT	5337	ART	357	ART	3701 C	ASE	401	EAS	4106
APY	544	ANT	5354	ART	358	ART	3702 C	ASE	402	EAS	4112
APY	545	ANT	5346	ART	360	ART	3233 C	ASE	403	EAS	4122
APY	546	ANT	5165	ART	361	ART	3234 C	ASE	404	EAS	4002 L
APY	550	ANT	5546	ART	362	ART	3282 C	ASE	420	EAS	4400
APY	563	ANT	5485	ART	368	ART	3235 C	ASE	441	EAS	4200
APY	564	ANT	5486	ART	380	ART	3111 C	ASE	442	EAS	4210
APY	574	ANT	5195	ART	381	ART	3112 C	ASE	443	EAS	4220
APY	579	ANT	5624	ART	383	ART	3150 C	ASE	444	EAS	4201 L
APY	585	ANT	5507	ART	384	ART	3151 C	ASE	445	EAS	4240
APY	588	ANT	5467	ART	385	ART	3158 C	ASE	451	EAS	4230
APY	589	ANT	5528	ART	408	ARH	4495	ASE	461	EAS	4300
APY	590	ANT	5717	ART	420	ARH	4310	ASE	462	EAS	4310
APY	595	ANT	5626	ART	421	ARH	4311	ASE	470	EAS	4412
APY	600	ANT	6917	ART	422	ARH	4312	ASE	471	EAS	4602
APY	601	ANT	6038	ART	423	ARH	4331	ASE	475	EAS	4803
APY	602	ANT	6408	ART	424	ARH	4332	ASE	485	EAS	4700
APY	604	ANT	6276	ART	425	ARH	4350	ASE	486	EAS	4710
APY	608	ANT	6434	ART	427	ARH	4431	ASE	490	EAS	4933
APY	609	ANT	6429	ART	428	ARH	4432	ASE	494	EAS	4510
APY	610	ANT	6737	ART	429	ARH	4452	ASE	496	EAS	4905
APY	611	ANT	6188	ART	430	ARH	4453	ASE	498	EAS	4939
APY	612	ANT	6388	ART	441	ART	4604 C	ASE	499	EAS	4949
APY	615	ANT	6716	ART	450	ART	4312 C	ASE	601	EAS	6141
APY	616	ANT	6445	ART	453	ART	4531 C	ASE	602	EAS	6142
APY	617	ANT	6735	ART	455	ART	4402 C	ASE	611	EAS	6135
APY	620	ANT	6718	ART	457	ART	4703 C	ASE	612	EAS	6136
APY	621	ANT	6186	ART	460	ART	4237 C	ASE	613	EAS	6137
APY	622	ANT	6286	ART	467	ART	4239 C	ASE	631	EAS	6221
APY	623	ANT	6588	ART	468	ART	4241 C	ASE	632	EAS	6222
APY	624	ANT	6627	ART	480	ART	4113 C	ASE	633	EAS	6223
APY	625	ANT	6356	ART	490	ARH	4935	ASE	641	EAS	6241
APY	626	ANT	6628	ART	496	ARH	4905	ASE	651	EAS	6514
APY	640	ANT	6387	ART	496	ART	4905 C	ASE	662	EAS	6503
APY	645	ANT	6487	ART	500	ARH	5805	ASE	663	EAS	6504
APY	650	ANT	6547	ART	596	ART	5905	ASE	671	EAS	6804 L
APY	660	ANT	6707	ART	611	ARH	6897	ASE	681	EAS	6720
APY	661	ANT	6728	ART	621	ARH	5989	ASE	690	AES	6935

A5E	691	EAS	6939	ATY	636	AST	6169	BCH	697	BCH	6910
ASE	696	EAS	6905	ATY	637	AST	6167	BCH	698	BCH	6940
A5E	697	EAS	6910	ATY	638	AST	6168	BCH	699	BCH	6971
ASE	698	EAS	6940	ATY	643	AST	6275	BCH	721	BCH	7627
ASE	699	EAS	6971	ATY	644	AST	6276	BCH	722	BCH	7727
ASE	799	EAS	7980	ATY	645	AST	6277	BCH	723	BCH	7257
ATG	201	ACC	2001	ATY	646	AST	6278	BCH	724	BCH	7077
ATG	203	ACC	2301	ATY	651	AST	6265	BCH	799	BCH	7980
ATG	301	ACC	2103	ATY	680	AST	6935	BCN	101	BCN	1210
ATG	302	ACC	3123	ATY	696	AST	6905	BCN	301	BCN	3256 C
ATG	304	ACC	3401	ATY	697	AST	6910	BCN	312	BCN	3431
ATG	305	ACC	3421	ATY	698	AST	6940	BCN	313	BCN	3461
ATG	401	ACC	4443	ATY	699	AST	6971	BCN	321	BCN	3223
ATG	407	ACC	4501	ATY	721	AST	7157	BCN	322	BCN	3224
ATG	418	ACC	4741	ATY	741	AST	7279	BCN	323	BCN	3225
ATG	496	ACC	4905	ATY	790	AST	7939	BCN	324	BCN	3281 L
ATG	498	ACC	4934	ATY	799	AST	7980	BCN	331	BCN	3611
ATG	503	ACC	4203	AY	311	AGR	3210	BCN	402	BCN	4012
ATG	504	ACC	5513	AY	362	AGR	3303	BCN	403	BCN	4751
ATG	505	ACC	5531	AY	400	AGR	4941	BCN	414	BCN	4462
ATG	507	ACC	5231	AY	405	AGR	4242	BCN	415	BCN	4464
ATG	508	ACC	5745	AY	409	AGR	4244	BCN	416	BCN	4471
ATG	509	ACC	5251	AY	413	AGR	4246	BCN	424	BCN	4227
ATG	510	ACC	5011	AY	414	AGR	4001 C	BCN	432	BCN	4612
ATG	517	ACC	5865	AY	415	AGR	4248	BCN	441	BCN	4500
ATG	528	ACC	5541	AY	432	AGR	4231	BCN	443	BCN	4521
ATG	600	ACC	6290	AY	465	AGR	4321	BCN	445	BCN	4510
ATG	603	ACC	6811	AY	484	AGR	4931	BCN	451	BCN	4700
ATG	604	ACC	6831	AY	496	AGR	4905	BCN	452	BCN	4750
ATG	605	ACC	6512	AY	611	AGR	6661 C	BCN	453	BCN	4710
ATG	606	ACC	6692	AY	636	AGR	6233	BCN	454	BCN	4720
ATG	608	ACC	6821	AY	641	AGR	6422	BCN	501	BCN	5463
ATG	611	ACC	6411	AY	642	AGR	6751	BCN	503	BCN	5226
ATG	696	ACC	6905	AY	644	AGR	6442	BCN	504	BCN	5620
ATG	697	ACC	6910	AY	646	AGR	6511	BCN	505	BCN	5905
ATG	698	ACC	6940	AY	647	AGR	6249	BCN	506	BCN	5470
ATG	699	ACC	6971	AY	565	PLS	6623	BCN	520	BCN	5528
ATG	701	ACC	7805	AY	658	AGR	6311	BCN	555	BCN	5715
ATG	702	ACC	7292	AY	660	AGR	6353	BCN	601	BCN	6931
ATG	707	ACC	7395	AY	662	AGR	6307	BCN	602	BCN	6932
ATG	790	ACC	7925	AY	664	AGR	6390	BCN	603	BCN	6933
ATG	799	ACC	7980	AY	665	AGR	6323	BCN	604	BCN	6934
ATS	150	MET	1010	AY	682	AGR	6380	BCN	697	BCN	6910
ATS	151	MET	1010 L	AY	684	AGR	6933	BCN	698	BCN	6940
ATS	200	MET	2701	AY	688	AGR	6932	BCN	699	BCN	6971
ATS	201	MET	2503 L	AY	696	AGR	6905	BES	202	AFS	2002
ATS	300	MET	3711	AY	697	AGR	6910	BES	211	BES	2121
ATS	301	MET	3100	AY	698	AGR	6940	BES	221	BES	2132
ATS	302	MET	3160	AY	699	AGR	6971	BES	251	BES	2930
ATS	443	MET	4460	AY	799	AGR	7980	BES	252	MAF	2402
ATS	446	MET	4401	BA	300	QMB	3700	BES	253	BES	2351
ATS	447	MET	4402	BA	401	BUL	4100	BES	254	BES	2430
ATS	496	MET	4905	BA	402	BUL	4112	BES	256	BES	1310
ATY	141	AST	1002	BA	403	BUL	4305	BES	259	BES	2411
ATY	142	AST	1022	BA	499	GEB	4949	BES	291	BES	2291
ATY	240	AST	2003	BA	540	CAP	5021	BES	292	BES	2391
ATY	241	AST	2004 C	BA	560	CAP	5001	BES	293	BES	2491
ATY	300	AST	3082 C	BA	564	GEB	5136	BIO	201	BSC	2010 C
ATY	305	AST	3652	BA	591	GEB	5805	BIO	202	BSC	2011 C
ATY	306	AST	3653	BA	610	GEB	6705	BIO	203	BSC	2012 C
ATY	316	AST	3015 C	BA	620	FIN	6937	BR	212	RTV	2000
ATY	317	AST	3016	BA	630	MAR	6716	BR	301	RTV	3300
ATY	350	AST	3034	BA	661	GEB	6757	BR	302	RTV	3403
ATY	496	AST	4905	BA	664	STA	6357	BR	318	RTV	3100
ATY	503	AST	5043	BA	665	STA	6358	BR	324	RTV	3210
ATY	510	AST	5113	BA	671	MAN	6156	BR	325	RTV	3220
ATY	511	AST	5114	BA	673	MAN	6108	BR	326	RTV	3201
ATY	517	AST	5600	BA	679	MAN	6721	BR	424	FIL	4202
ATY	601	AST	6506	BCH	351	BCH	3613	BR	425	RTV	4500
ATY	602	AST	6507	BCH	411	BCH	4313	BR	426	RTV	4206
ATY	603	PHS	6606	BCH	412	BCH	4203	BR	436	RTV	4302
ATY	604	PHS	6616	BCH	436	PCB	4930	BR	438	RTV	4101
ATY	605	AST	6214	BCH	479	PCB	4535	BR	442	RTV	4311
ATY	606	AST	6215	BCH	496	BCH	4905	BR	450	FIL	4200
ATY	607	AST	6216	BCH	512	BCH	5055	BR	460	RTV	4931
ATY	608	AST	6306	BCH	513	BCH	5055 L	BR	490	RTV	4930
ATY	611	ASI	6205	BCH	521	BCH	5878	BR	496	RTV	4905
ATY	612	ASI	6206	BCH	522	BCH	5879	BR	499	RTV	4949
ATY	613	ASI	6207	BCH	578	BCH	5056	BR	518	EME	5506
ATY	617	AST	6606	BCH	601	BCH	6065	BTY	181	BOT	1010 C
ATY	618	AST	5607	BCH	602	BCH	6206	BTY	203	BOT	2011 C
ATY	621	ASI	6105	BCH	603	BCH	6415	BTY	242	BOT	2710
ATY	622	ASI	6106	BCH	606	BCH	6876	BTY	301	PCB	3043 C
ATY	623	ASI	6115	BCH	612	BCH	6746	BTY	310	BOT	3503
ATY	624	ASI	6116	BCH	614	BCH	6296	BTY	311	BOT	3503 L
ATY	631	AST	6406	BCH	615	BCH	6156 C	BTY	342	BOT	3153 C
ATY	633	AST	6165	BCH	616	BCH	6936	BTY	345	BOT	3173 C
ATY	634	AST	6166	BCH	617	BCH	6937	BTY	346	BOT	3163 C

TABLE 2

BTY	370	BCH	3023
BTY	375	BOT	3800
BTY	380	BOT	3303 C
BTY	441	BOT	4283 C
BTY	472	BOT	4053
BTY	496	BOT	4905
BTY	500	BOT	5625
BTY	501	PCB	5046 C
BTY	502	BOT	5695
BTY	515	BOT	5505 C
BTY	521	BOT	5435 C
BTY	522	BOT	5405 C
BTY	523	BOT	5485 C
BTY	524	BOT	5755 C
BTY	532	BOT	5225 C
BTY	542	BOT	5725 C
BTY	551	PCB	5115 C
BTY	565	APB	5415
BTY	602	BOT	6646 C
BTY	604	PCB	6356 C
BTY	605	BOT	6951
BTY	607	BOT	6666
BTY	615	BOT	6566
BTY	616	BOT	6526
BTY	617	BOT	6516
BTY	618	BOT	6576
BTY	621	BOT	6446
BTY	622	BOT	6346 C
BTY	623	BOT	6466
BTY	624	PCB	6626 C
BTY	625	BOT	6496 C
BTY	626	BOT	6476 C
BTY	631	BOT	6316 C
BTY	632	BOT	6326 C
BTY	642	BOT	6716 C
BTY	653	PCB	6176
BTY	654	PCB	6176 L
BTY	655	BOT	6256 C
BTY	656	PCB	6216
BTY	664	PCB	6691
BTY	666	ZOO	6126
BTY	692	BOT	6936
BTY	695	BOT	6927
BTY	696	BOT	6905
BRY	697	BOT	6910
BTY	698	BOT	6940
BTY	699	BOT	6971
BTY	799	BOT	7980
CBS	211	APB	2150
CBS	221	APB	2151
CBS	231	APB	2152
CBS	251	BSC	2930
CBS	264	APB	2150 L
CBS	291	APB	2991
CBS	292	APB	2992
CBS	293	APB	2993
CCD	311	HUN	3122
CCD	312	DIE	3124
CCD	406	DIE	4245
CCD	407	DIE	4126
CCD	411	DIE	4275
CCD	412	DIE	4175
CCD	414	DIE	4355
CCD	420	DIE	4316
CCD	421	DIE	4377
CCD	422	DIE	4251
CCD	423	DIE	4276
CCD	480	DIE	4516
CDP	403	STD	4151
CDP	496	STD	4905
CE	290	ECI	2122
CE	300	ECI	3515
CE	320	ECI	3213
CE	340	ECI	3403
CE	370	CES	3123
CE	371	CES	3103
CE	400	ECI	4514
CE	401	ECI	4145
CE	403	CES	4034
CE	404	ECI	4137
CE	405	ECI	4131
CE	410	TTE	4104
CE	411	TTE	4007
CE	420	ECI	4214
CE	423	ENV	4621
CE	450	ENV	4404
CE	451	ENV	4514
CE	460	ECI	4314
CE	461	ECI	4305
CE	462	ECI	4324
CE	470	CES	4607
CE	472	CES	4705
CE	474	CES	4704
CE	490	ECI	4935
CE	491	ECI	4152
CE	492	EGN	4822
CE	493	ECI	4041
CE	496	ECI	4905
CE	497	ECI	4151
CE	499	ECI	4949
CE	501	ECI	5125
CE	502	ECI	5147
CE	504	ECI	5157
CE	505	ECI	5166
CE	510	TTE	5105
CE	512	TTE	5006
CE	513	TTE	5215
CE	514	TTE	5701
CE	515	TTE	5257
CE	520	ECI	5225
CE	521	ECI	5625
CE	522	ECI	5235
CE	523	ENV	5625
CE	525	ECI	5265
CE	530	ECI	5186
CE	560	ECI	5317
CE	561	ECI	5335
CE	562	ECI	5325
CE	570	CES	5715
CE	572	CES	5325
CE	573	CES	5305
CE	574	CES	5726
CE	575	CES	5801
CE	590	ECI	5045
CE	591	ECI	5124
CE	602	ECI	6153
CE	603	ECI	6154
CE	610	TTE	6106
CE	611	TTE	6306
CE	612	TTE	6606
CE	613	TTE	6256
CE	614	TTE	6516
CE	616	TTE	6107
CE	617	TTE	6526
CE	618	TTE	6307
CE	619	TTE	6267
CE	620	ECI	6616
CE	621	ECI	6233
CE	622	ECI	6236
CE	623	ECI	6237
CE	624	ECI	6227
CE	625	ECI	6228
CE	627	ECI	6238
CE	628	ECI	6234
CE	629	ECI	6223
CE	630	ECI	6224
CE	640	ECI	6426
CE	641	CES	6616
CE	642	ECI	6416
CE	660	ECI	6316
CE	661	ECI	6326
CE	662	ECI	6436
CE	663	ECI	6346
CE	665	ECI	6356
CE	670	CES	6207
CE	671	CES	6706
CE	672	CES	6108
CE	673	CES	6136 L
CE	674	CES	6106
CE	676	CES	6516
CE	677	CES	6551
CE	679	CES	6526
CE	680	CES	6716
CE	681	ECI	6575
CE	682	ECI	6576
CE	690	CES	6146
CE	691	ECI	6936
CE	694	ECI	6974
CE	696	ECI	6905
CE	697	ECI	6910
CE	698	ECI	6940
CE	699	ECI	6971
CE	799	ECI	7980
CEP	499	ADV	4949
CEP	499	AGE	4949
CEP	499	CIS	4949
CEP	499	EAS	4949
CEP	499	ECI	4949
CEP	499	ECM	4949
CEP	499	EEL	4949
CEP	499	EGM	4949
CEP	499	ENU	4949
CEP	499	ENV	4949
CEP	499	EOC	4949
CEP	499	ESI	4949
CEP	499	ETD	4949
CEP	499	ETG	4949
CEP	499	JOU	4949
CEP	499	PAD	4949
CEP	499	PUR	4949
CEP	499	RTV	4949
CH	133	CHI	1120
CH	134	CHI	1121
CH	135	CHI	1122
CH	202	CHI	2201
CH	203	CHI	2202
CH	330	CHI	3500
CHE	100	ECH	1001
CHE	300	ECH	3783
CHE	301	ECH	3023
CHE	302	ECH	3023 L
CHE	303	CAP	3210
CHE	305	ECH	3803
CHE	311	ECH	3303
CHE	312	ECH	3303 L
CHE	331	ECH	3109
CHE	333	ECH	3101
CHE	344	ECH	3264 L
CHE	353	ECH	3824
CHE	363	ECH	3203
CHE	365	ECH	3204
CHE	376	ECH	3804 L
CHE	402	ECH	4842
CHE	411	ECH	4323
CHE	412	ECH	4323 L
CHE	413	ECH	4624
CHE	421	ECH	4504
CHE	422	ECH	4504 L
CHE	423	ECH	4524
CHE	431	ECH	4144
CHE	433	ECH	4123
CHE	435	ECH	4145
CHE	441	ECH	4264
CHE	442	ECH	4281
CHE	445	ECH	4012
CHE	448	ECH	4705
CEH	449	ECH	4724
CHE	451	ECH	4825
CHE	452	ECH	4704
CHE	462	ECH	4224 L
CHE	463	ECH	4403
CHE	464	ECH	4404 L
CHE	471	ECH	4604
CHE	473	ECH	4644
CHE	475	ECH	4664
CHE	476	ECH	4605
CHE	481	ECH	4934
CHE	492	ECH	4221 L
CHE	496	ECH	4905
CHE	497	ECH	4944
CHE	499	ECH	4949
CHE	512	ECH	5344 L
CHE	546	CHM	5511
CHE	561	CHM	5272
CHE	577	ECH	5708
CHE	601	ECH	6926
CHE	602	ECH	6844
CHE	603	ECH	6845
CHE	604	ECH	6846
CHE	605	ECH	6847
CHE	606	ECH	6848
CHE	610	ECH	6306
CHE	611	ECH	6307
CHE	614	ECH	6326
CHE	615	ECH	6626
CHE	616	ECH	6627
CHE	617	ECH	6666
CHE	621	ECH	6506
CHE	622	ECH	6526
CHE	626	ECH	6296
CHE	631	ECH	6126
CHE	632	ECH	6146
CHE	633	ECH	6147
CHE	640	ECH	6261

CHE	641	ECH	6285	CLP	640	CLP	6375	CPS	245	ISC	2454
CHE	642	ECH	6286	CLP	642	CLP	6409	CPS	251	PSC	2936
CHE	643	ECH	6206	COP	643	CYP	6709	CPS	264	PSC	2191 L
CHE	644	ECH	6263	CLP	651	CLP	6943	CPS	291	PSC	2901
CHE	645	ECH	6207	CLP	652	CLP	6943	CPS	292	PSC	2507
CHE	646	ECH	6208	CLP	691	CLP	6376	CPS	293	PSC	2707
CHE	647	ECH	6706	CLP	692	CLP	6449	CPS	311	PSC	3900
CHE	648	ECH	6766	CLP	696	CLP	6905	CPS	342	PSC	3402
CHE	650	ECH	6826	CLP	697	CLP	6910	CPS	343	ISC	3455
CHE	651	ECH	6827	CLP	698	CLP	6940	CRJ	301	CCJ	3020
CHE	662	ECH	6406	CLP	699	CLP	6971	CRJ	401	CCJ	4100
CHE	663	ECH	6226	CLP	714	CLP	7427	CRJ	402	CCJ	4300
CHE	665	ECH	6413	CLP	715	CLP	7438	CRJ	403	CCJ	4290
CHE	671	ECH	6707	CLP	722	DEP	7217	CRJ	495	CCJ	4934
CHE	672	ECH	6646	CLP	723	CLP	7936	CRJ	496	CCJ	4905
CHE	673	ECH	6647	CLP	724	CLP	7938	CS	201	CLT	2370
CHE	676	ECH	6606	CLP	744	CLP	7407	CS	202	CLA	2700
CHE	677	ECH	6746	CLP	745	CLP	7379	CS	203	CLT	2371
CHE	678	ECH	6726	CLP	746	CLP	7408	CS	204	HSC	2531
CHE	679	ECH	6727	CLP	753	CLP	7942	CS	205	CLT	2102
CHE	680	ECH	6936	CLP	754	CLP	7488	CS	301	CLT	3291
CHE	681	ECH	6328	CLP	755	CYP	7308	CS	302	CLT	3340
CHE	682	ECH	6269	CLP	757	CLP	7348	CS	303	CLT	3230
CHE	683	ECH	6159	CLP	758	CYP	7769	CS	304	CLA	3501
CHE	685	ECH	6428	CLP	759	CLP	7468	CS	450	CLA	4935
CHE	686	ECH	6688	CLP	769	CLP	7949	CS	496	CLT	4905
CHE	687	ECH	6849	CLP	799	CLP	7980	CY	101	CHM	1020
CHE	690	ECH	6937	CMS	111	MGF	1113	CY	102	CHM	1021
CHE	692	ECH	6939	COE	400	OCE	4016	CY	201	CHM	2040
CHE	696	ECH	6905	COE	410	OCP	4290	CY	202	CHM	2041 C
CHE	697	ECH	6910	COE	540	EOC	5310	CY	203	CHM	2042 C
CHE	698	ECH	6940	COE	550	EOC	5860	CY	204	CHM	2043 C
CHE	699	ECH	6971	COE	560	EOC	5052	CY	211	CHM	2045 C
CHE	799	ECH	7980	COE	610	OCP	6165	CY	212	CHM	2046 C
CIS	300	COC	3400	COE	611	OCP	6167	CY	213	CHM	2047 C
CIS	301	CAP	3800	COE	612	OCP	6169	CY	221	CHM	2050 C
CIS	302	COP	3110	COE	613	OCP	6295	CY	222	CHM	2051 C
CIS	303	COP	3210	COE	614	OCP	6296	CY	223	CHM	2052 C
CIS	305	COP	3111	COE	615	OCP	6297	CY	231	CHM	2055 C
CIS	306	COP	3120	COE	620	EOC	6430	CY	232	CHM	2056 C
CIS	307	COP	3202	COE	621	EOC	6431	CY	331	CHM	3120 C
CIS	311	COC	3110	COE	630	EOC	6196	CY	341	CHM	3400
CIS	312	CDA	3101	COE	631	EOC	6850	CY	342	CHM	3401
CIS	321	COP	3530	COE	632	EOC	6934	CY	343	CHM	3401 L
CIS	322	COP	3550	COE	640	OCP	6056	CY	362	CHM	3200
CIS	323	CNM	3110	COE	641	OCP	6555	CY	363	CHM	3200 L
CIS	331	COT	3001	COE	642	OCP	6556	CY	381	CHM	3210
CIS	350	COP	3212	COE	643	EOC	6934	CY	382	CHM	3211
CIS	351	CNM	3100	COE	691	EOC	6939	CY	384	CHM	3210 L
CIS	361	CDA	3030	COE	696	EOC	6905	CY	385	CHM	3211 L
CIS	380	COP	3134	COE	697	EOC	6910	CY	387	CHM	3215
CIS	385	COP	3120	COE	698	EOC	6940	CY	388	CHM	3216
CIS	386	COP	3121	COE	699	EOC	6971	CY	389	CHM	3219
CIS	401	COP	4400	COM	601	MMC	6421	CY	410	CHM	4740 L
CIS	402	COP	4401	COM	602	ADV	6504	CY	411	CHM	4610
CIS	403	COP	4150	COM	603	RTV	5801	CY	433	CHM	4130
CIS	404	COP	4151	COM	604	JOU	6501	CY	434	CHM	4130 L
CIS	405	COP	4112	COM	605	MMC	6660	CY	435	CHM	4133
CIS	406	COP	4226	COM	606	MMC	6400	CY	436	CHM	4133 L
CIS	411	COP	4644	COM	609	MMC	6202	CY	451	CHM	4410
CIS	412	COP	4622	COM	611	MMC	6560	CY	452	CHM	4411
CIS	420	CNM	4141	COM	614	PUR	6934	CY	453	CHM	4412
CIS	431	CIS	4023	COM	615	JOU	6190	CY	454	CHM	4411 L
CIS	433	CIS	4025	COM	616	JOU	6891	CY	455	CHM	4412 L
CIS	435	CRM	4121	COM	619	MMC	6303	CY	465	CHM	4230
CIS	439	CAP	4621	COM	621	COM	6315	CY	466	CHM	4230 L
CIS	440	CIS	4321	COM	623	RTV	6503	CY	475	CHM	4380
CIS	453	COP	4300	COM	625	FIL	6101	CY	481	CHM	4060
CIS	455	COT	4320	COM	628	RTV	6601	CY	496	CHM	4905
CIS	461	CDA	4040	COM	629	MMC	6304	CY	498	CHM	4910
CIS	462	CDA	4041	COM	632	ADV	6503	CY	533	CHM	5157
CIS	463	CDA	4171	COM	660	MMC	6920	CY	543	CHM	5413L
CIS	468	CAP	4721	COM	690	MMC	6936	CY	545	CHM	5514
CIS	470	COP	4540	COM	696	MMC	6905	CY	546	CHM	5511
CIS	471	COP	4640	COM	697	MMC	6910	CY	550	CHS	5110
CIS	472	COP	4641	COM	698	COM	6940	CY	551	CHS	5110 L
CIS	480	COT	4125	COM	699	MMC	6971	CY	561	CHM	5272
CIS	482	CIS	4020	CPS	123	PSC	1502	CY	565	CHM	5235
CIS	484	CIS	4300	CPS	125	PSC	1510	CY	578	CHM	5300
CIS	486	CIS	4302	CPS	135	PSC	1420	CY	596	CHM	5905
CIS	490	CIS	4935	CPS	216	ISC	2400	CY	601	CHM	6470
CIS	496	CIS	4905	CPS	223	PSC	2501	CY	602	CHM	6471
CIS	499	CIS	4949	CPS	225	ISC	2452	CY	604	CHM	6140
CLP	611	CLP	6447	CPS	226	ISC	2401	CY	605	CHM	6935
CLP	612	CLP	6446	CPS	231	PSC	2701	CY	606	CHM	6710
CLP	613	CLP	6448	CPS	235	PSC	2121	CY	607	CHM	6730
CLP	621	CLP	6497	CPS	236	ISC	2402	CY	608	CHM	6720
CLP	622	DEP	6216	CPS	241	ISC	2453	CY	610	CHM	6622 C

TABLE 2

CY	612	CHM	6620	DEN	721	DEN	2714	ED	633	EDS	6140
CY	615	CHM	6624	DEN	722	DEN	7213	ED	634	EDS	6100
CY	616	CHM	6623	DEN	723	DEN	7405	ED	635	EDG	6285
CY	617	CHM	6680	DEN	724	DEN	7323	ED	640	EDH	6066
CY	618	CHM	6690	DEN	725	DEN	7431	ED	641	EDH	6947
CY	629	CHM	6520	DEN	726	DEN	7433	ED	642	EDH	6946
CY	632	CHM	6153	DEN	727	DEN	7425	ED	643	EDH	6305
CY	633	CHM	6158 L	DEN	736	DEN	7441	ED	646	SCE	6140
CY	634	CHM	6154	DEN	741	DEN	7451	ED	648	EDG	6691
CY	635	CHM	6155	DEN	742	DEN	7453	ED	655	MAE	6515
CY	638	CHM	6190	DEN	751	DEN	7352	ED	656	MAE	6636 C
CY	639	CHM	6180	DEN	757	DEN	7325	ED	658	MAE	6512
CY	640	CHM	6590	DEN	770	DEN	7514	ED	663	MUE	6406
CY	641	CHM	6430	DEN	771	DEN	7515	ED	664	MUE	6416
CY	642	CHM	6460	DEN	773	DEN	7380	ED	665	MUE	6147
CY	643	CHM	6461	DEN	774	DEN	7390	ED	666	MUE	6146
CY	644	CHM	6440	DEN	815	DEN	8281	ED	667	MUE	6080
CY	645	CHM	6490	DEN	830	DEN	8470	ED	670	EDS	6925
CY	647	CHM	6481	DEN	831	DEN	8408	ED	671	ARE	6047
CY	648	CHM	6482	DEN	832	DEN	8435	ED	673	ARE	6141
CY	649	CHM	6483	DEN	833	DEN	8438	ED	675	ARE	6148
CY	650	CHM	6580	DEN	834	DEN	8443	ED	676	ARE	6388
CY	652	CHM	6512	DEN	839	DEN	8428	ED	678	ARE	6648
CY	653	CHM	6510	DEN	840	DEN	8317	ED	680	RED	6548
CY	654	CHM	6513	DEN	843	DEN	8411	ED	681	RED	6805
CY	655	CHM	6480	DEN	844	DEN	8413	ED	682	EDG	6941
CY	657	CHS	6120	DEN	845	DEN	8415	ED	683	RED	6656
CY	658	CHM	6515	DEN	846	DEN	8417	ED	684	RED	6646
CY	659	CHM	6440	DEN	847	DEN	8419	ED	685	RED	6247
CY	661	CHM	6225	DEN	852	DEN	8448	ED	686	RED	6447
CY	662	CHM	6226	DEN	853	DEN	8445	ED	687	RED	6448
CY	663	CHM	6227	DEN	854	DEN	8461	ED	688	RED	6667
CY	668	CHM	6271	DEN	855	DEN	8463	ED	690	EDG	6931
CY	669	CHM	6271 L	DEN	856	DEN	8465	ED	696	EDG	6905
CY	670	CHM	6390	DEN	858	DEN	8475	ED	697	EDG	6910
CY	671	CHM	6260	DEN	870	DEN	8516	ED	698	EDG	6940
CY	673	CHM	6251	DEN	871	DEN	8517	ED	699	EDG	6971
CY	674	CHM	6242	DEN	872	DEN	8518	ED	700	EDG	7361
CY	675	CHM	6270	DEN	873	DEN	8480	ED	701	EDG	7222
CY	677	CHM	6381	DEN	874	DEN	8490	ED	702	EDM	7935
CY	697	CHM	6910	DY	301	DAS	3211	ED	710	SSE	7939
CY	698	CHM	6940	DY	302	DAS	3214	ED	711	EME	7938
CY	699	CHM	6971	DY	400	DAS	4941	ED	720	EDG	7795
CY	756	CHM	7485	DY	401	DAS	4213	ED	730	EDG	7941
CY	757	CHM	7498	DY	405	DAS	4411	ED	731	EDG	7391
CY	799	CHM	7980	DY	407	DAS	4510	ED	740	EDG	7235
DEN	501	DEN	5001	DY	455	DAS	4614	ED	741	EDG	7947
DEN	502	DEN	5002	DY	601	DAS	6281	ED	742	EDG	7948
DEN	503	DEN	5303	DY	603	DAS	6931	ED	743	EDH	7937
DEN	504	DEN	5301	DY	604	DAS	6531	ED	744	EDG	7699
DEN	505	DEN	5321	DY	605	DAS	6212 C	ED	751	MAE	7899
DEN	506	DEN	5200	DY	606	DAS	6541	ED	752	EDG	7665
DEN	507	DEN	5501	DY	607	DAS	6512 C	ED	753	EDG	7666
DEN	508	DEN	5180	DY	608	DAS	6555	ED	757	RED	7819
DEN	509	DEN	5190	DY	610	DAS	6617	ED	758	RED	7848
DEN	517	DEN	5503	DY	613	DAS	6651	ED	759	RED	7818
DEN	527	DEN	5505	DY	696	DAS	6905	ED	760	SCE	7933
DEN	535	DEN	5100	DY	697	DAS	6910	ED	761	RED	7938
DEN	537	DEN	5508	DY	698	DAS	6940	ED	762	RED	7747
DEN	540	DEN	5110	DY	699	DAS	6971	ED	763	RED	7947
DEN	545	DEN	5120	ED	418	EME	4102	ED	767	MUE	7938
DEN	546	DEN	5130	ED	419	EME	4201	ED	770	LAE	7936
DEN	608	DEN	6240	ED	480	RED	4147	ED	799	EDG	7980
DEN	609	DEN	6210	ED	496	EDG	4905	EDA	600	EDA	6061
DEN	610	DEN	6305	ED	500	EDG	5940	EDA	601	EDA	6510
DEN	611	DEN	6220	ED	501	EDG	5940	EDA	602	EDA	6530
DEN	612	DEN	6250	ED	560	RED	5310	EDA	603	EDA	6242
DEN	613	DEN	6311	ED	561	RED	5355	EDA	604	EDA	6232
DEN	614	DEN	6230	ED	562	RED	5337	EDA	605	EDA	6201
DEN	615	DEN	6270	ED	600	EDG	6250	EDA	606	EDA	6948
DEN	620	DEN	6211	ED	601	EDM	6005	EDA	607	EDA	6222
DEN	622	DEN	6212	ED	603	EDH	6053	EDA	608	EDA	6203
DEN	629	DEN	6260	ED	604	EDM	6945	EDA	609	EDA	6935
DEN	635	DEN	6350	ED	605	EDG	6046	EDA	610	ADE	6260
DEN	637	DEN	6360	ED	611	EME	6052	EDA	615	ADE	6262
DEN	638	DEN	6313	ED	612	EME	6207	EDA	616	EDA	6306
DEN	649	DEN	6315	ED	613	EME	6716	EDA	617	EDA	6225
DEN	650	DEN	6351	ED	614	EME	6325	EDA	620	EEX	6511
DEN	670	DEN	6511	ED	615	EME	6505	EDA	631	EDA	6192
DEN	671	DEN	6512	ED	616	EME	6105	EDA	632	EDA	6195
DEN	672	DEN	6313	ED	617	EME	6805	EDA	640	EDA	6271
DEN	673	DEN	6280	ED	618	EME	6205	EDA	641	EDA	6105
DEN	674	DEN	6290	ED	619	EME	6807	EDA	690	EDA	6931
DEN	715	DEN	7280	ED	620	EDG	6712	EDA	696	EDA	6905
DEN	716	DEN	7401	ED	621	EME	6945	EDA	697	EDA	6910
DEN	717	DEN	7421	ED	622	EME	6606	EDA	698	EDA	6940
DEN	718	DEN	7403	ED	623	EME	6405	EDA	699	EDA	6971
DEN	719	DEN	7423	ED	625	EDG	6525	EDA	700	EDA	7205

EDA	702	EDA	7260
EDA	703	EDA	7244
EDA	704	EDA	7550
EDA	705	EDA	7236
EDA	706	EDA	7103
EDA	707	EDA	7990
EDA	710	EDA	7565
EDA	720	EEX	7535
EDA	721	EEX	7945
EDA	730	EDA	7945
EDA	799	EDA	7980
EDC	301	EGC	3053
EDC	450	EGC	4033
EDC	610	EGC	6005
EDC	611	EGC	6317
EDC	612	EGC	6405
EDC	613	EGC	6225
EDC	614	EGC	6416
EDC	618	EGC	6606
EDC	620	EGC	6447
EDC	621	EGC	6726
EDC	622	EGC	6045
EDC	623	EGC	6505
EDC	624	EGC	6545
EDC	626	EGC	6438
EDC	627	EGC	6467
EDC	628	EGC	6461
EDC	629	EGC	6463
EDC	633	EGC	6465
EDC	640	EGC	6055
EDC	641	EGC	6057
EDC	658	EGC	6426
EDC	659	EGC	6934
EDC	660	EGC	6054
EDC	690	EGC	6938
EDC	696	EGC	6905
EDC	697	EGC	6910
EDC	698	EGC	6940
EDC	699	EGC	6971
EDC	701	EGC	7329
EDC	708	EGC	7891
EDC	710	EGC	7446
EDC	711	EGC	7585
EDC	712	EGC	7840
EDC	713	EGC	7318
EDC	714	EGC	7852
EDC	715	EGC	7937
EDC	716	EGC	7890
EDC	717	EGC	7890
EDC	717	EGC	7890
EDC	719	EGC	7893
EDC	721	EGC	7706
EDC	722	EGC	7616
EDC	723	EGC	7485
EDC	740	EGC	7056
EDC	799	EGC	7980
EDE	311	EDE	3800
EDE	332	ARE	3312
EDE	355	EDE	3804
EDE	400	EDE	4203
EDE	405	EDE	4943
EDE	496	EDE	4905
EDE	503	EEC	5945
EDE	504	EEC	5945
EDE	531	ARE	5313
EDE	532	ARE	5315
EDE	550	MAE	5318
EDE	560	SCE	5115
EDE	600	EDE	6205
EDE	601	EDE	6225
EDE	602	EDE	6948
EDE	603	EEC	6051
EDE	604	EEC	6205
EDE	605	EEC	6405
EDE	608	EDE	6541
EDE	620	SSE	6117
EDE	635	EDS	6351
EDE	650	MAE	6115
EDE	660	SCE	6117
EDE	670	LAE	6319
EDE	671	LAE	6301
EDE	672	LAE	6714
EDE	690	EDE	6932
EDE	696	EDE	6905
EDE	697	EDE	6910
EDE	698	EDE	6940
EDE	700	EDE	7247
EDE	701	EDE	7248
EDE	702	EDE	7415
EDE	703	EEC	7932
EDE	704	EEC	7932
EDF	300	EDF	3514
EDF	320	EDF	3604
EDF	341	EDF	3122
EDF	342	EDF	3135
EDF	345	EDF	3110
EDF	390	EDF	3935
EDF	410	EDF	4542
EDF	431	EDF	4710
EDF	433	EDF	4780
EDF	440	EDF	4114
EDF	442	EDF	4210
EDF	450	EDF	4430
EDF	496	EDF	4905
EDF	543	EDF	5215
EDF	600	EDF	6520
EDF	601	EDF	6525
EDF	610	EDF	6544
EDF	620	EDF	6606
EDF	625	EDF	6630
EDF	631	EDF	6712
EDF	632	EDF	6720
EDF	640	EDF	6113
EDF	641	EDF	6355
EDF	642	EDF	6218
EDF	643	EDF	6215
EDF	644	EDF	6111 L
EDF	645	EDF	6112 L
EDF	646	EDF	6211
EDF	647	EDF	6118
EDF	648	EDF	6119
EDF	649	EDF	6943
EDF	650	EDF	6436
EDF	660	EDF	6401
EDF	662	EDF	6941
EDF	663	EDF	6481
EDF	664	EDF	6403
EDF	665	EDF	6487
EDF	666	EDF	6933
EDF	690	EDF	6938
EDF	696	EDF	6905
EDF	697	EDF	6910
EDF	698	EDF	6940
EDF	699	EDF	6971
EDF	701	EDF	7584
EDF	710	EDF	7555
EDF	711	EDF	7575
EDF	712	EDF	7573
EDF	720	EDF	7608
EDF	725	EDF	7639
EDF	740	EDF	7146
EDF	741	EDF	7149
EDF	743	EDF	7229
EDF	747	EDF	7198
EDF	750	EDF	7432
EDF	760	EDF	7486
EDF	764	EDF	7405
EDF	765	EDF	7931
EDF	766	EDF	7932
EDF	768	EDF	7491
EDF	780	EDF	7934
EDF	799	EDF	7980
EDH	300	EEX	3010
EDH	301	EEX	3040
EDH	310	EMR	3011
EDH	311	EEX	3222
EDH	400	EMR	4201
EDH	401	EMR	4202
EDH	402	EMR	4230
EDH	403	EMR	4204
EDH	404	EMR	4214
EDH	405	EEX	4861
EDH	406	EMR	4330
EDH	419	EED	4011
EDH	451	EPH	4033
EDH	496	EEX	4905
EDH	600	EEX	6051
EDH	601	EMR	6361
EDH	603	EGI	6051
EDH	604	EGI	6245
EDH	605	EEX	6059
EDH	606	EEX	6248
EDH	607	ELD	6947
EDH	610	EEX	6863
EDH	615	EEX	6045
EDH	619	EED	6221
EDH	620	EED	6225
EDH	621	EED	6241
EDH	622	EED	6245
EDH	631	EEX	6521
EDH	651	EPH	6411
EDH	652	EPH	6185
EDH	653	EPH	6395
EDH	654	EPH	6305
EDH	661	ELD	6112
EDH	662	ELD	6936
EDH	663	ELD	6211
EDH	664	ELD	6111
EDH	665	EEX	6883
EDH	667	ELD	6241
EDH	668	ELD	6937
EDH	669	ELD	6213
EDH	670	EMR	6801
EDH	671	EED	6943
EDH	672	EPH	6942
EDH	674	ELD	6944
EDH	690	EEX	6936
EDH	696	EEX	6905
EDH	697	EEX	6910
EDH	698	EEX	6940
EDH	700	EEX	7930
EDH	701	EMR	7936
EDH	702	EEX	7932
EDH	703	EEX	7934
EDH	704	EEX	7865
EDH	720	EED	7930
EDH	721	EED	7936
EDH	750	ELD	7938
EDH	755	EPH	7937
EDH	756	EPH	7936
EDH	799	EEX	7980
EDS	301	ESE	3932
EDS	303	EDM	3021
EDS	306	ESE	3940
EDS	331	ESE	3034
EDS	400	ESE	4011
EDS	403	ESE	4210
EDS	405	ESE	4943
EDS	414	EEX	4141
EDS	419	SED	4335
EDS	484	FLE	4333
EDS	454	MAE	4330
EDS	464	SCE	4330
EDS	474	LAE	4335
EDS	494	FLE	4333
EDS	494	LAE	4235
EDS	496	ESE	4905
EDS	601	EDM	6215
EDS	602	ESE	6215
EDS	604	ESE	6235
EDS	605	ESE	6415
EDS	631	ESE	6920
EDS	635	ESE	6385
EDS	640	SSE	6133
EDS	642	SSE	6377 C
EDS	643	SSE	6398
EDS	650	MAE	6138
EDS	654	MAE	6947
EDS	660	SCE	6237
EDS	661	SCE	6736
EDS	662	SCE	6947
EDS	670	LAE	6365
EDS	671	LAE	6366
EDS	672	LAE	6945
EDS	682	FLE	6946
EDS	685	FLE	6337
EDS	690	ESE	6939
EDS	696	ESE	6905
EDS	698	ESE	6940
EDS	700	ESE	7931
EDS	731	ESE	7922
EDS	761	SCE	7238
EDS	762	SCE	7949
EDS	785	FLE	7939
EDV	302	EVT	3065
EDV	303	EVT	3365
EDV	345	BTE	3365
EDV	346	BTE	3367
EDV	405	EVT	4940
EDV	440	BTE	4068
EDV	441	BTE	4364
EDV	442	BTE	4360
EDV	443	BTE	4949
EDV	446	BTE	4762

TABLE 2

EDV	480	EVT	4302
EDV	496	BTE	4905
EDV	560	EVT	5166
EDV	570	ADE	5081
EDV	571	ADE	5472
EDV	580	EVT	5167
EDV	600	EVT	6264
EDV	601	EVT	6165
EDV	602	EVT	6265
EDV	641	BTE	6379
EDV	642	BTE	6378
EDV	643	BTE	6373
EDV	644	BTE	6671
EDV	645	BTE	6948
EDV	646	BTE	6371
EDV	647	BTE	6935
EDV	655	EVT	6949
EDV	660	EVT	6170
EDV	661	EVT	6381
EDV	670	ADE	6671
EDV	671	ADE	6385
EDV	690	EVT	6933
EDV	696	EVT	6905
EDV	697	EVT	6910
EDV	698	EVT	6940
EDV	700	EVT	7930
EDV	760	EVT	7762
EDV	761	EVT	7661
EDV	770	ADE	7282
EDV	771	ADE	7672
EE	301	EEL	3001
EE	302	EEL	3003
EE	304	EEL	3368
EE	305	EEL	3368 L
EE	320	EEL	3001 L
EE	321	EEL	3303
EE	322	EEL	3304
EE	325	EEL	3396
EE	331	EEL	3111
EE	332	EEL	3112
EE	333	EEL	3135
EE	340	EEL	3303 L
EE	352	EEL	3472
EE	353	EEL	3473
EE	361	EEL	3751
EE	380	EEL	3218
EE	381	EEL	3211
EE	382	EEL	3212
EE	420	EEL	4304 L
EE	422	EEL	4373
EE	423	EEL	4373 L
EE	425	EEL	4310 C
EE	427	EEL	4331 C
EE	428	ELR	4371
EE	429	ELR	4372
EE	430	EEL	4201 L
EE	431	EEL	4440 C
EE	440	EEL	4514 L
EE	441	EEL	4514
EE	443	EEL	4516
EE	450	EEL	4914 L
EE	451	EEL	4461
EE	452	EEL	4431
EE	455	EEL	4436 L
EE	456	EEL	4436
EE	458	EEL	4479
EE	461	EEL	4712 C
EE	462	EEL	4713 C
EE	463	EEL	4714 C
EE	474	EEL	4657
EE	481	EEL	4204
EE	482	EEL	4205
EE	483	EEL	4213
EE	484	EEL	4214
EE	485	EEL	4215
EE	486	ELR	4116
EE	491	EEL	4941
EE	492	EEL	4930 C
EE	496	EEL	4905
EE	499	EEL	4949
EE	514	ELR	5112
EE	516	ELR	5210
EE	526	EEL	5370
EE	533	EEL	5161
EE	541	EEL	5718
EE	549	EEL	5719 C
EE	558	EEL	5485
EE	562	EEL	5768
EE	564	EEL	5761
EE	565	EEL	5821
EE	566	EEL	5769
EE	567	EEL	5762
EE	568	EEL	5562
EE	570	EEL	5182
EE	571	EEL	5134
EE	592	EEL	5934
EE	596	EEL	5905
EE	600	EEL	6170
EE	601	EEL	6171
EE	602	EEL	6172
EE	611	EEL	6442
EE	613	EEL	6443
EE	614	EEL	6444
EE	615	ELR	6225
EE	616	ELR	6226
EE	617	EEL	6382
EE	618	EEL	6383
EE	619	EEL	6384
EE	620	EEL	6397 C
EE	621	EEL	6398
EE	622	EEL	6311
EE	623	EEL	6312
EE	624	EEL	6313
EE	625	EEL	6381
EE	626	EEL	6399
EE	628	EEL	6388
EE	630	EEL	6156
EE	631	EEL	6157
EE	633	EEL	6162
EE	640	EEL	6544
EE	641	EEL	6534
EE	642	EEL	6535
EE	644	EEL	6503
EE	645	EEL	6524
EE	646	EEL	6509
EE	649	EEL	6505
EE	651	EEL	6486
EE	652	EEL	6487
EE	653	EEL	6450
EE	660	EEL	6824
EE	661	EEL	6733
EE	662	EEL	6767
EE	663	EEL	6843
EE	664	EEL	6825
EE	667	EEL	6741 C
EE	669	EEL	6826
EE	670	EEL	6614
EE	671	EEL	6615
EE	672	EEL	6616
EE	679	EEL	6622
EE	680	EEL	6264
EE	681	EEL	6265
EE	682	EEL	6266
EE	685	EEL	6267
EE	692	EEL	6935
EE	695	EEL	6932
EE	696	EEL	6905
EE	697	EEL	6910
EE	698	ELR	6940
EE	699	EEL	6971
EE	764	EEL	7827
EE	799	EEL	7980
EGC	180	EGN	1002
EGC	183	EGN	1006
EGC	210	EGN	2845
EGC	300	EGN	3080
EGC	301	EGN	3023
EGC	304	EGN	3082
EGC	311	EGN	3353
EGC	400	EGN	4036
EGC	401	HIS	4470
EGC	402	HIS	4471
EGC	403	HIS	4472
EGC	444	EMA	4004
EGC	450	EGN	4730
EGC	451	EGN	4731
EGC	452	EGN	4732 L
EGC	455	EGN	4735
EGC	541	EGM	5816
EGC	601	EGM	6811
EGC	602	EGM	6812
EGC	603	EGM	6813
EGC	604	EGM	6835
EGC	605	EGM	6845
EGC	621	EGN	6740
EGC	622	EGN	6741
EGC	623	EGN	6742
EGC	633	EGM	6321
EGC	634	EGM	6322
EGC	635	EGM	6323
EGC	636	EGM	6324
EGC	637	EGM	6325
EGC	640	EGM	6250
EGC	671	EEL	6451
EGC	672	EEL	6452
EGC	675	EEL	6452 L
EGC	677	EEL	6447 L
EGR	183	EGN	1110 C
EGR	193	EGN	1111 C
EGR	194	EGN	1126
EGR	195	EGN	1130
EGR	196	EGN	1123
EGR	421	EGN	4114
EH	110	ENC	1017 L
EH	111	ENC	1102
EH	112	ENC	1418
EH	121	ENG	1200
EH	122	ENG	1400
EH	123	ENG	1710
EH	124	ENC	1256
EH	200	ENL	2130
EH	201	LIS	2001
EH	202	LIS	2100
EH	203	ENG	2540
EH	214	LIT	2212
EH	215	LIT	2214
EH	216	LIT	2223
EH	220	ENL	2033
EH	221	ENL	2031
EH	222	ENL	2034
EH	223	ENL	2042
EH	229	CRW	2321
EH	230	CRW	2221
EH	235	LIT	2160
EH	241	ESL	2422
EH	251	LIT	2930
EH	271	AML	2020
EH	272	AML	2021
EH	281	ENG	2120
EH	291	ENG	2932
EH	292	ENG	2932
EH	293	ENG	2932
EH	301	ENC	3464
EH	302	ENC	3343
EH	303	ENC	3351
EH	304	ENG	3500
EH	305	ENG	3551
EH	309	AML	3113
EH	310	ENL	3451
EH	311	ENG	3462
EH	312	ENG	3463
EH	314	LIT	3162
EH	315	ENG	3321
EH	316	ENG	3325
EH	317	ENG	3315
EH	321	ENG	3203
EH	322	ENG	3410
EH	323	ENG	3714
EH	328	CRW	3530
EH	329	CRW	3330
EH	330	CRW	3230
EH	341	LIT	3311
EH	345	LIT	3321
EH	346	LIT	3342
EH	347	LIT	3363
EH	348	LIT	3411
EH	350	ENG	3132
EH	355	ENG	3135
EH	356	ENG	3136
EH	371	ENG	3221
EH	372	ENG	3222
EH	375	LIT	3443
EH	381	ENG	3812
EH	382	SPC	3680
EH	391	ENC	3532
EH	392	SPC	3605
EH	401	ENG	4511
EH	402	LIN	4400
EH	403	ENC	4356
EH	404	ENC	4542
EH	405	SPC	4631
EH	411	LIT	4218
EH	412	LIT	4219
EH	414	ENG	4470

EH	415	ENG	4471
EH	416	LIT	4228
EH	417	ENG	4748
EH	418	LIT	4131
EH	420	ENL	4300
EH	421	ENL	4111
EH	423	ENL	4311
EH	428	CRW	4540
EH	429	CRW	4906
EH	430	CRW	4905
EH	431	ENL	413S
EH	432	ENL	4136
EH	436	ENL	4331
EH	437	ENL	4341
EH	438	ENL	4321
EH	441	ENL	4351
EH	442	ENL	4352
EH	443	ENG	4424
EH	451	ENL	4403
EH	452	ENL	4404
EH	461	ENL	4412
EH	462	ENL	441S
EH	471	ENG	474S
EH	473	AML	4210
EH	474	AML	4301
EH	480	LIT	4371
EH	481	LIT	4282
EH	482	LIT	4284
EH	484	ENG	4105
EH	485	ENG	4936
EH	489	LIT	4930
EH	490	LAE	4414
EH	491	ENG	4161
EH	492	ENG	4165
EH	494	LAE	4235
EH	495	ENG	4141
EH	496	ENG	4905
EH	596	ENG	5905
EH	600	ENG	6063
EH	607	LAE	6947
EH	613	ENG	6143
EH	614	ENG	6154
EH	615	LAE	6379
EH	616	RED	6380
EH	617	RED	6480
EH	618	LIN	6417
EH	619	ENG	6595
EH	620	ENL	6304
EH	626	ENL	6314
EH	630	ENL	6323
EH	633	ENG	6148
EH	640	ENL	6394
EH	646	ENL	6425
EH	650	ENL	6447
EH	655	AML	6341
EH	660	AML	6342
EH	665	LIT	6373
EH	666	ENG	6839
EH	670	LIT	6283
EH	675	ENG	6144
EH	677	ENG	6217
EH	678	ENG	6755
EH	679	ENG	6437
EH	683	SPC	6239
EH	684	ENG	6718
EH	687	LIT	6934
EH	690	CRW	6250
EH	691	CRW	6350
EH	692	CRW	6550
EH	696	ENG	6905
EH	697	ENG	6910
EH	698	LAE	6940
EH	699	ENG	6974
EH	700	ENG	7066
EH	705	LIN	7938
EH	720	ENL	7317
EH	730	ENL	7326
EH	735	ENL	7149
EH	740	ENL	7393
EH	745	ENL	7427
EH	750	ENL	7448
EH	755	AML	7191
EH	760	AML	7192
EH	770	LIT	7289
EH	775	ENG	7147
EH	780	ENG	7119
EH	790	ENG	7938
EH	799	ENG	7980
ENT	320	ETI	3411 C
ENT	321	ETI	3412 C
ENT	351	ETC	3334
ENT	352	ETC	3334 L
ENT	353	ETC	3353
ENT	354	ETC	3323 C
ENT	355	ETC	3342 L
ENT	356	ETC	3340 L
ENT	357	ETC	3331 L
ENT	358	ETC	3344 L
ENT	380	ETC	3326
ENT	396	ETG	3935
ENT	399	ETG	3945
ENT	452	EVS	4215
ENT	457	ETC	4332 L
ENT	470	ETI	4405
ENT	471	ETI	4406
ENT	472	ETI	4407
ENT	473	ETM	4801 L
ENT	474	ETM	4804 L
ENT	490	ETG	4940
ENT	496	ETG	4905
ENT	499	ETG	4949
ENV	201	EES	2001
ENV	301	ENV	3003
ENV	360	EES	3008
ENV	370	ENV	3930
ENV	400	ENV	4021
ENV	401	EES	4004
ENV	420	EES	4101
ENV	422	EES	4401
ENV	431	EES	4241
ENV	434	EES	4201
ENV	440	ENV	4201
ENV	445	ENV	4241
ENV	451	ENV	4104
ENV	480	ENV	4351
ENV	496	ENV	4905
ENV	498	ENV	4932
ENV	499	ENV	4949
ENV	500	ENV	5517
ENV	520	EES	5105
ENV	522	ENV	5005
ENV	531	EES	5245
ENV	540	ENV	5206
ENV	551	ENV	5126
ENV	560	EES	5007
ENV	561	EES	5306
ENV	580	ENV	5306
ENV	591	ENV	5930
ENV	600	ENV	6516
ENV	601	ENV	6437
ENV	602	ENV	6438
ENV	611	ENV	6666
ENV	613	ENV	6606
ENV	616	ENV	6656
ENV	617	EES	6356
ENV	618	EES	6355
ENV	624	EES	6936
ENV	626	EES	6166
ENV	627	EES	6136
ENV	628	EES	6106
ENV	630	EES	6207
ENV	631	EES	6246
ENV	632	EES	6208
ENV	633	EES	6209
ENV	634	ENV	6409
ENV	641	ENV	6236
ENV	642	ENV	6216
ENV	643	ENV	6286
ENV	644	ENV	6211
ENV	650	EES	6506
ENV	652	EES	6036
ENV	653	ENV	6130
ENV	654	ENV	6116
ENV	655	ENV	6115
ENV	656	ENV	6117
ENV	657	ENV	6118
ENV	668	EES	6006
ENV	670	ENV	6006
ENV	671	ENV	6932
ENV	693	ENV	6916
ENV	696	ENV	6905
ENV	697	ENV	6910
ENV	698	ENV	6940
ENV	699	ENV	6971
ENV	799	ENV	7980
ES	200	ECO	2000
ES	201	ECO	2013
ES	202	ECO	2023
ES	211	ECO	2620
ES	301	ECO	3251
ES	302	ECO	3100
ES	321	ECO	3213
ES	331	ECP	3302
ES	341	ECO	3703
ES	345	ECS	3403
ES	351	ECP	3433
ES	354	ECP	3423
ES	361	ECO	3411
ES	372	ECP	3203
ES	377	ECP	3141
ES	390	ECP	3000
ES	400	ECO	493S
ES	401	ECO	420S
ES	402	ECO	4101
ES	405	ECO	4303
ES	410	ECO	4633
ES	411	ECO	4634
ES	413	ECS	4334
ES	414	ECO	4622
ES	415	ECP	4143
ES	418	ECS	4013
ES	431	ECO	4504
ES	444	ECO	4713
ES	448	ECS	4203
ES	449	ECS	4003
ES	455	ECP	4403
ES	469	ECO	4431
ES	481	ECP	4602
ES	491	SSI	4601
ES	492	SSI	4602
ES	493	SSI	4603
ES	496	ECO	490S
ES	498	ECO	4934
ES	501	ECO	5204
ES	502	ECO	5111
ES	521	ECO	5227
ES	531	ECO	5545
ES	535	ECO	5556
ES	536	ECO	5566
ES	543	ECO	5716
ES	545	ECS	5425
ES	547	ECS	5115
ES	549	ECS	5005
ES	560	ECO	5404
ES	561	ECO	5424
ES	562	ECO	5425
ES	572	ECP	520S
ES	580	ECP	5624
ES	581	ECP	5614
ES	585	ECP	5106
ES	586	ECP	5606
ES	601	ECO	6206
ES	602	ECO	6116
ES	605	ECO	6305
ES	606	ECO	6306
ES	608	ECO	6315
ES	610	ECO	6626
ES	611	ECO	6627
ES	614	ECO	6617
ES	615	ECP	670S
ES	616	ECO	6433
ES	617	ECS	6015
ES	618	ECS	6025
ES	621	ECO	6216
ES	622	ECO	6266
ES	625	ECO	6236
ES	632	ECO	6516
ES	633	ECO	6257
ES	634	ECO	6536
ES	635	ECO	6526
ES	641	ECO	6706
ES	644	ECO	6717
ES	645	ECS	6405
ES	646	ECS	6415
ES	647	ECS	6426
ES	649	ECS	6006
ES	654	ECP	6426
ES	655	ECP	6405
ES	657	ECP	6407
ES	660	ECO	6407
ES	661	ECO	6426
ES	662	ECO	6427
ES	663	ECO	6428
ES	665	ECO	6405

TABLE 2

ES	666	ECO	6406	EY	312	ENY	3531	FH	450	FRW	4350
ES	669	ECO	6435	EY	313	ENY	3511	FH	460	FRW	4480
ES	672	ECP	6216	EY	315	ENY	3521	FH	480	FRW	4770
ES	673	ECP	6225	EY	316	ENY	3551	FH	496	FRE	4905
ES	674	ECP	6207	EY	317	ENY	3515	FH	505	FRE	5423
ES	675	ECP	6536	EY	319	ENY	3513	FH	506	FRE	5851
ES	676	ECP	6537	EY	328	ENY	3004	FH	512	FRE	5840
ES	680	ECP	6625	EY	331	ENY	3931	FH	545	FRW	5556
ES	681	ECP	6615	EY	351	ENY	3541	FH	560	FRW	5481
ES	692	ECO	6115	EY	400	ENY	4949	FH	600	FRW	6900
ES	696	ECP	6905	EY	406	ENY	4221	FH	602	FRE	6050
ES	697	ECO	6910	EY	410	ENY	4353	FH	603	FRE	6051
ES	698	ECO	6940	EY	411	ENY	4571	FH	604	FRE	6785
ES	699	ECO	6971	EY	412	ENY	4201	FH	606	FRE	6730
ES	701	ECO	7208	EY	420	ENY	4660 C	FH	610	FRW	6805
ES	702	ECO	7208	EY	460	ENY	4161	FH	615	FRW	6825
ES	702	ECO	7118	EY	496	ENY	4905	FH	618	FRW	6415
ES	730	ECO	7938	EY	518	ENY	5561	FH	619	FRW	6416
ES	799	ECO	7980	EY	522	ENY	5781	FH	620	FRW	6340
ESM	241	BCN	2400	EY	601	ENY	6810	FH	621	FRW	6215
ESM	301	EGM	3511	EY	606	ENY	6151	FH	622	FRW	6217
ESM	302	EGM	3400	EY	608	ENY	6321	FH	623	FRW	6311
ESM	303	EGM	3520	EY	611	ENY	6932	FH	630	FRW	6711
ESM	330	EGM	3311	EY	612	ENY	6401 C	FH	631	FRW	6276
ESM	342	BCN	3401	EY	613	ENY	6601	FH	641	FRW	6510
ESM	401	EGM	4000	EY	615	ENY	6451	FH	642	FRW	6536
ESM	402	EGM	4001	EY	616	ENY	6203	FH	645	FRW	6318
ESM	411	EGM	4910 L	EY	618	ENY	6651	FH	650	FRW	6351
ESM	420	EGM	4200	EY	620	ENY	6661	FH	660	FRW	6560
ESM	431	EGM	4312	EY	621	ENY	6591	FH	670	FRW	6288
ESM	432	EGM	4313	EY	622	ENY	6241	FH	671	FRW	6328
ESM	433	EGM	4314	EY	623	ENY	6611	FH	680	FRW	6755
ESM	460	EGM	4560	EY	624	ENY	6581	FH	696	FRW	6905
ESM	480	EGM	4008	EY	625	ENY	6986	FH	697	FRW	6910
ESM	481	EGM	4009	EY	626	ENY	6502	FH	698	FRE	6940
ESM	496	EGM	4905	EY	629	ENY	6723 C	FH	699	FRW	6971
ESM	498	EGM	4901	EY	631	ENY	6731	FH	799	FRW	7980
ESM	499	EGM	4949	EY	632	ENY	6711	FI	321	FIN	3233
ESM	510	EGM	5005	EY	633	ENY	6780 C	FI	322	FIN	3303
ESM	527	EGM	5421	EY	634	ENY	6801	FI	324	FIN	3105
ESM	533	EGM	5533	EY	635	ENY	6261	FI	326	FIN	3403
ESM	534	EGM	5550	EY	636	ENY	6262	FI	360	RMI	3015
ESM	536	EGM	5430	EY	637	ENY	6663	FI	361	RMI	3217
ESM	549	EGM	5111 L	EY	640	ENY	6821	FI	362	RMI	3215
ESM	596	EGM	5905	EY	642	ENY	6822	FI	363	RMI	3105
ESM	601	EGM	6611	EY	696	ENY	6905	FI	365	RMI	3206
ESM	602	EGM	6612	EY	697	ENY	6910	FI	366	RMI	3207
ESM	603	EGM	6613	EY	698	ENY	6940	FI	420	FIN	4313
ESM	605	EGM	6584	EY	699	ENY	6971	FI	421	FIN	4244
ESM	621	EGM	6215	EY	799	ENY	7980	FI	422	FIN	4504
ESM	622	EGM	6225	FA	200	HUM	2510	FI	424	FIN	4514
ESM	623	EGM	6235	FC	335	FRC	3212 L	FI	427	FIN	4414
ESM	624	EGM	6236	FC	400	FRC	4949	FI	428	FIN	4424
ESM	625	EGM	6245	FC	403	FRC	4411	FI	429	FIN	4604
ESM	628	EGM	6422	FC	417	FRC	4271	FI	462	RMI	4135
ESM	635	EGM	6717	FC	437	FRC	4612	FI	463	RMI	4506
ESM	636	EGM	6341	FC	441	FRC	4223	FI	464	RMI	4120
ESM	637	EGM	6342	FC	442	FRC	4241	FI	486	RMI	4805
ESM	638	EGM	6351	FC	449	FRC	4244	FI	487	RMI	4305
ESM	644	EGM	6444	FC	450	FRC	4224 L	FI	496	RMI	4905
ESM	645	EGM	6445	FC	451	FRC	4225 L	FI	498	FIN	4934
ESM	646	EGM	6460	FC	496	FRC	4905	FI	520	FIN	5354
ESM	652	EGM	6652	FH	101	FRE	1110	FI	524	FIN	5525
ESM	653	EGM	6653	FH	104	FRE	1111	FI	528	FIN	5425
ESM	654	EGM	6654	FH	105	FRE	1112	FI	590	FIN	5405
ESM	655	EGM	6551	FH	134	FRE	1121	FI	620	FIN	6829
ESM	667	EGM	6736	FH	135	FRE	1122	FI	622	FIN	6816
ESM	670	EGM	6670	FH	202	FRE	2200	FI	625	FIN	6246
ESM	671	EGM	6671	FH	204	FRE	2240	FI	627	FIN	6446
ESM	673	EGM	6716	FH	250	FRT	2276	FI	629	FIN	6626
ESM	674	EGM	6726	FH	251	FRT	2301	FI	637	FIN	6456
ESM	675	EGM	6718	FH	305	FRE	3300	FI	662	RMI	6195
ESM	676	EGM	6476	FH	306	FRE	3320	FI	665	RMI	6296
ESM	679	EGM	6478	FH	327	FRW	3100	FI	668	RMI	6936
ESM	682	EGM	6682	FH	328	FRW	3101	FI	696	FIN	6905
ESM	683	EGM	6683	FH	329	FRW	3102	FI	697	RMI	6910
ESM	684	EGM	6684	FH	330	FRE	3500	FI	698	FIN	6940
ESM	690	EGM	6936	FH	404	FRE	4780	FI	699	FIN	6971
ESM	692	EGM	6934	FH	405	FRE	4421	FI	727	FIN	7808
ESM	696	EGM	6905	FH	406	FRE	4850	FI	728	FIN	7809
ESM	697	EGM	6910	FH	417	FRW	4410	FI	790	FIN	7938
ESM	698	EGM	6940	FH	419	FRW	4420	FI	799	FIN	7980
ESM	699	EGM	6971	FH	421	FRW	4216	FLE	296	FOL	2905
ESM	799	EGM	7980	FH	423	FRW	4300	FLE	302	FOL	3730
EY	300	ENY	3003	FH	430	FRW	4710	FLE	351	LIN	3030
EY	301	ENY	3005	FH	431	FRW	4275	FLE	496	FOL	4905
EY	303	ENY	3701	FH	442	FRW	4535	FRC	302	FNR	3050
EY	311	ENY	3006 L	FH	445	FRW	4555	FRC	317	FOR	3140

FRC	318	FOR	3710	FRE	646	AEB	6651	GN	445	GEW	4554
FRC	320	FOR	3003	FRE	650	AEB	6674	GN	455	GEW	4400
FRC	321	FOR	3462	FRE	660	AEB	6533	GN	460	GEW	4730
FRC	326	FOR	3120	FRE	661	AEB	6571	GN	480	GEW	4820
FRC	353	WIS	3401	FRE	662	AEB	6572	GN	490	GEW	4750
FRC	360	FOR	3123	FRE	663	AEB	6428	GN	496	GEW	4905
FRC	381	FNR	3011	FRE	682	AEB	6483	GN	600	GEW	6900
FRC	382	FNR	3421	FRE	690	AEB	6815	GN	602	GER	6050
FRC	383	FNR	3650	FRE	696	AEB	6905	GN	603	GER	6051
FRC	396	FNR	3905	FRE	697	AEB	6910	GN	604	GEW	6600
FRC	400	FNR	4940	FRE	698	AEB	6940	GN	606	GER	6405
FRC	403	FOR	4162	FRE	699	AEB	6971	GN	612	GER	6845
FRC	406	FOR	4212	FRE	799	AEB	7980	GN	613	GEW	6335
FRC	412	FNR	4931	FS	201	FOS	2001	GN	620	GER	6841
FRC	413	FOR	4030	FS	202	FOS	2002	GN	624	ICW	6400
FRC	416	FOR	4621	FS	203	FOS	2003	GN	625	ICW	6401
FRC	420	FOR	4541	FS	250	HUN	2201	GN	628	GEW	6517
FRC	434	WIS	4541	FS	301	FOS	3042	GN	629	GEW	6535
FRC	437	WIS	4443	FS	350	HUN	3221	GN	630	GEW	6545
FRC	447	FOR	4733	FS	400	FOS	4949	GN	640	GEW	6305
FRC	450	FNR	4612	FS	402	FOS	4311	GN	645	GEW	6558
FRC	455	WIS	4220	FS	403	FOS	4222	GN	650	GEW	6938
FRC	460	FOR	4151	FS	404	FOS	4411	GN	651	GEW	6401
FRC	461	FOR	4624	FS	405	HUN	4241	GN	652	GEW	6425
FRC	462	FOR	5640	FS	406	DIE	4244	GN	653	GEW	6489
FRC	481	FNR	4660	FS	407	DIE	4125	GN	660	GEW	6735
FRC	482	FNR	4623	FS	411	FOS	4731	GN	680	GEW	6825
FRC	496	FNR	4905	FS	412	FOS	4321	GN	690	GEW	6755
FRC	601	FNR	6608	FS	414	FOS	4722	GN	696	GEW	6905
FRC	611	FNR	6933	FS	415	FOS	4232	GN	697	GEW	6910
FRC	612	FNR	6934	FS	421	FOS	4931	GN	698	GER	6940
FRC	618	FOR	6170	FS	441	FOS	4252	GN	699	GEW	6971
FRC	620	FOR	6340	FS	450	FOS	4427	GPY	100	GEO	1010
FRC	626	FOR	6310	FS	451	FOS	4513	GPY	105	GEO	1000
FRC	630	SOS	6233	FS	452	FOS	4551	GPY	200	GEO	2500
FRC	631	FOR	6742	FS	453	FOS	4531	GPY	201	GEO	2420
FRC	680	FOR	6543	FS	455	FOS	4541	GPY	202	GEO	2410 C
FRC	696	FNR	6905	FS	496	FOS	4905	GPY	292	GEO	2932
FRC	697	FNR	6910	FS	600	FOS	6915	GPY	300	GEO	3200
FRC	698	FNR	6940	FS	601	FOS	6226	GPY	301	GEO	3200 L
FRC	699	FNR	6971	FS	602	FOS	6641	GPY	305	GEA	3270
FRE	300	AEB	3934	FS	603	FOS	6355	GPY	321	GEO	3502
FRE	301	AEB	3103	FS	604	FOS	6371	GPY	326	GEO	3602
FRE	304	AEB	3111	FS	606	FOS	6428	GPY	331	GEO	3370
FRE	305	AEB	3123	FS	607	FOS	6315	GPY	341	GEO	3471
FRE	310	AEB	3133	FS	608	FOS	6726	GPY	351	GEO	3430
FRE	320	AEB	3300	FS	611	AGR	6661 C	GPY	370	GEA	3504
FRE	322	AEB	3306	FS	613	FOS	6455	GPY	371	GEA	3554
FRE	330	AEB	3141	FS	621	FOS	6435	GPY	373	GEA	3624
FRE	332	AEB	3413	FS	641	HUN	6245	GPY	374	GEA	3753
FRE	400	AEB	4949	FS	642	HUN	6321	GPY	377	GEA	3600
FRE	401	AEB	4935	FS	643	HUN	6301	GPY	380	GEA	3210
FRE	409	AEB	4931	FS	644	HUN	6292	GPY	381	GEA	3223
FRE	410	AEB	4152	FS	645	HUN	6191	GPY	384	GEA	3464
FRE	411	AEB	4164	FS	651	FOS	6936	GPY	385	GEA	3300
FRE	412	AEB	4421	FS	661	FOS	6938	GPY	386	GEA	3410
FRE	421	AEB	4314	FS	696	FOS	6905	GPY	400	GEO	4201 C
FRE	423	AEB	4672	FS	698	FOS	6940	GPY	401	GEO	4124 C
FRE	424	AEB	4324	FS	699	FOS	6971	GPY	405	GEO	4100 C
FRE	425	AEB	4334	GER	601	GEY	6646	GPY	408	GEO	4164
FRE	426	AEB	4343	GK	133	GRE	1120	GPY	477	GEA	4684
FRE	427	AEB	4344	GK	134	GRE	1121	GPY	479	GEO	4930
FRE	430	AEB	4434	GK	135	GRE	1122	GPY	489	GEO	4930
FRE	440	AEB	4224	GK	201	GRW	2250	GPY	492	GEO	4970
FRE	447	AEB	4726	GK	307	GRW	3100	GPY	496	GEO	4905
FRE	460	AEB	4511	GK	308	GRW	3101	GPY	499	GEO	4944
FRE	465	AEB	4172	GK	309	GRW	3102	GPY	501	GEO	5125 C
FRE	496	AEB	4905	GK	496	GRW	4905	GPY	502	GEO	5145 C
FRE	531	AEB	5444	GN	133	GER	1120	GPY	505	GEO	5105 C
FRE	541	AEB	5612	GN	134	GER	1121	GPY	506	GEO	5945 C
FRE	603	AEB	6933	GN	135	GER	1122	GPY	508	GEO	5166 C
FRE	604	AEB	6182	GN	201	GER	2250	GPY	523	GEO	5809
FRE	605	AEB	6363	GN	202	GER	2200	GPY	526	GEO	5605
FRE	606	AEB	6727	GN	250	GET	2480	GPY	527	GEO	5567
FRE	607	AEB	6592	GN	251	GEW	2930	GPY	535	GEO	5839
FRE	608	AEB	6553	GN	304	GER	3410	GPY	538	GEO	5704
FRE	610	AEB	6184	GN	305	GER	3420	GPY	551	GEO	5437 C
FRE	611	AEB	6186	GN	327	GEW	3100	GPY	579	GEO	5930
FRE	620	AEB	6373	GN	328	GEW	3101	GPY	596	GEO	5905
FRE	621	AEB	6383	GN	330	GER	3500	GPY	600	GEO	6058
FRE	622	AEB	6384	GN	331	GER	3501	GPY	603	GEO	611B C
FRE	623	AEB	6385	GN	406	GER	4400	GPY	606	GEO	6946
FRE	630	AEB	6453	GN	412	GER	4840	GPY	621	GEO	6509
FRE	631	AEB	6455 C	GN	413	GEW	4332	GPY	625	GEA	6179
FRE	632	AEB	6465	GN	428	GEW	4513	GPY	635	GEO	6356
FRE	640	AEB	6252	GN	429	GEW	4530	GPY	651	GEO	6435
FRE	641	AEB	6263	GN	430	GEW	4542	GPY	661	GEO	6429
FRE	645	AEB	6645	GN	440	GEW	4300	GPY	679	GEO	6938

TABLE 2

GPY	681	GEA	6219	HRP	401	HSC	4550	HY	319	EUH	3144
GPY	685	GEA	6309	HRP	405	HCA	4112	HY	324	EUH	3202
GPY	686	GEA	6419	HRP	406	HCA	4511	HY	325	EUH	3233
GPY	688	GEA	6468 L	HRP	407	HSC	4162	HY	326	EUH	3234
GPY	689	GEA	6469	HRP	408	HSC	4151	HY	327	EUH	3206
GPY	690	GEA	6109	HRP	409	HSC	4390	HY	330	EUH	3571
GPY	696	GEO	6905	HRP	410	HSC	4221	HY	331	EUH	3572
GPY	697	GEO	6910	HRP	411	HSC	4573	HY	332	EUH	3573
GPY	698	GEO	6940	HRP	414	HSC	4391	HY	335	EUH	3500
GPY	699	GEO	6971	HRP	417	HSC	4540	HY	336	EUH	3501
GPY	799	GEO	7980	HRP	431	HSC	4522	HY	337	EUH	3502
GY	109	GLY	1000	HRP	432	APB	4503	HY	342	HIS	3483
GY	201	GLY	2015	HRP	433	HSC	4516	HY	343	AFH	3100
GY	202	GLY	2100	HRP	434	HSC	4517	HY	344	AFH	3200
GY	220	GLY	2026	HRP	460	HCA	4802	HY	352	AMH	3421
GY	240	GLY	2152	HRP	465	HSC	4940	HY	353	AMH	3422
GY	400	GLY	4155	HRP	490	HSC	4930	HY	354	AMH	3423
GY	401	GLY	4700	HRP	496	HES	4905	HY	355	AMH	3315
GY	407	GLY	4210	HRP	551	LIN	5711 L	HY	360	HIS	3300
GY	408	GLY	4200	HRP	600	HSC	6395	HY	370	LAH	3301
GY	409	GLY	4400	HRP	690	HSC	6939	HY	371	LAH	3130
GY	411	GLY	4800	HRP	696	HSC	6905	HY	372	LAH	3201
GY	418	GLY	4301	HRP	697	HSC	6910	HY	373	LAH	3300
GY	421	GLY	4610	HRP	698	HSC	6940	HY	374	LAH	3712
GY	427	GLY	4511	HSC	601	HOS	6931	HY	381	ASH	3403
GY	496	GLY	4905	HSC	603	HOS	6112	HY	382	ASH	3302
GY	429	GLY	4522	HSC	604	HOS	6122	HY	383	ASH	3303
GY	440	GLY	4750	HSC	605	HOS	6201	HY	384	AMH	3523
GY	470	OCE	4005	HSC	606	HOS	6212	HY	385	ASH	3521
GY	480	GLY	4865	HSC	607	HOS	6231	HY	386	ASH	3550
GY	490	GLY	4930	HSC	611	HOS	6311	HY	400	HIS	4114
GY	496	GLY	4915	HSC	612	HOS	6412	HY	401	HIS	4470
GY	501	GLY	5704	HSC	614	HOS	6351	HY	402	HIS	4471
GY	507	GLY	5640	HSC	615	HOS	6331	HY	404	AMH	4160
GY	508	GLY	5241	HSC	620	HOS	6611 C	HY	405	AMH	4170
GY	515	GLY	5230	HSC	621	HOS	6631	HY	406	AMH	4572
GY	517	GLY	5734	HSC	626	HOS	6361	HY	407	EUH	4100
GY	518	GLY	5221	HSC	630	FRC	6233	HY	408	EUH	4404
GY	540	GLY	5790	HSC	631	FRC	6243	HY	409	EUH	4414
GY	550	GLY	5820	HSC	632	FRC	6251	HY	410	EUH	4650
GY	560	GLY	5555	HSC	633	FRC	6252	HY	411	EUH	4651
GY	580	GLY	5050	HSC	634	FRC	6256	HY	412	EUH	4092
GY	582	GLY	5450	HSC	640	ORH	6280	HY	413	ECS	4334
GY	584	GLY	5860	HSC	641	ORH	6223	HY	414	EUH	4244
GY	585	GLY	5861	HSC	650	VEC	6251	HY	415	EUH	4280
GY	600	GLY	6430	HSC	691	HOS	6932	HY	417	EUH	4610
GY	601	GLY	6705	HSC	692	HOS	6941	HY	418	EUH	4611
GY	607	GLY	6645	HSC	696	HOS	6905	HY	419	EUH	4601
GY	608	GLY	6651	HSC	697	HOS	6910	HY	420	EUH	4603
GY	611	GLY	6250	HSC	698	HOS	6940	HY	421	EUH	4313
GY	612	GLY	6813	HSC	699	HOS	6971	HY	422	EUH	4223
GY	613	GLY	6896	HSC	799	HOS	7980	HY	423	EUH	4511
GY	614	GLY	6265	HUM	211	HUM	2210	HY	424	EUH	4513
GY	616	GLY	6245	HUM	221	HUM	2230	HY	426	EUH	4451
GY	618	GLY	6225	HUM	231	HUM	2250	HY	430	EUH	4463
GY	619	GLY	6345	HUM	232	HUM	2410	HY	431	EUH	4464
GY	623	GLY	6620	HUM	233	HUM	2420	HY	433	HIS	4930
GY	624	GLY	6660	HUM	240	IDS	2190	HY	434	EUH	4640
GY	625	GLY	6615	HUM	250	HUM	2930	HY	435	EUH	4641
GY	640	GLY	6530	HUM	281	HUM	2020	HY	436	WOH	4220
GY	651	GLY	6829	HUM	291	HUM	2229	HY	437	AFH	4450
GY	660	GLY	6931	HUM	292	HUM	2239	HY	439	AFH	4250
GY	661	GLY	6341	HUM	293	HUM	2259	HY	440	AMH	4307
GY	662	GLY	6351	HUM	311	HUM	3431	HY	441	AMH	4309
GY	664	GLY	6574	HUM	321	HUM	3220	HY	442	AMH	4460
GY	666	ZOO	6126	HUM	333	HUM	3421	HY	443	HES	4100
GY	668	GLY	6575	HUM	350	HUM	3930	HY	444	AMH	4172
GY	675	OCG	6276	HUM	371	HUM	3473	HY	445	AMH	4530
GY	676	GLY	6931	HUM	381	HUM	3251	HY	446	AMH	4546
GY	690	GLY	6932	HW	133	HEB	1100	HY	447	AMH	4547
GY	696	GLY	6905	HW	134	HEB	1101	HY	450	AMH	4423
GY	697	GLY	6910	HW	135	HEB	1102	HY	451	AMH	4402
GY	698	GLY	6940	HW	307	HEB	3230	HY	452	AMH	4403
GY	699	GLY	6971	HW	308	HEB	3231	HY	453	AMH	4444
HA	600	HCA	6101	HW	309	HEB	3232	HY	454	AMH	4041
HA	601	HCA	6302	HY	200	EUH	2000	HY	455	AMH	4935
HA	602	HCA	6201	HY	201	EUH	2001	HY	456	AMH	4579
HA	610	HCA	6391	HY	202	EUH	2002	HY	457	AMH	4578
HA	611	HCA	6691	HY	245	AMH	2010	HY	458	AMH	4110
HA	612	HCA	6401	HY	246	AMH	2020	HY	459	AMH	4130
HA	640	HCA	6717	HY	300	HIS	3152	HY	460	EUH	4314
HA	641	HCA	6801	HY	307	EUH	3101	HY	461	EUH	4315
HA	646	HCA	6811	HY	308	EUH	3401	HY	465	LAH	4732
HA	691	HCA	6716	HY	309	EUH	3412	HY	466	LAH	4733
HA	696	HCA	6905	HY	313	EUH	3121	HY	470	LAH	4722
HRP	101	H5C	1001	HY	314	EUH	3122	HY	471	LAH	4723
HRP	331	APB	3203	HY	315	EUH	3123	HY	472	LAH	4471
HRP	332	HSC	3520 L	HY	318	EUH	3140	HY	473	LAH	4472

HY	474	LAH	4433	ISE	403	ESI	4569	JM	301	JOU	3100
HY	475	LAH	4520	ISE	410	EIN	4344	JM	302	JOU	3110
HY	476	LAH	4510	ISE	420	EIN	4354	JM	342	JOU	3601
HY	477	LAH	4620	ISE	421	EIN	4355	JM	401	MMC	4420
HY	478	LAH	4630	ISE	432	EIN	4333	JM	402	JOU	4104
HY	482	ASH	4441	ISE	433	EIN	4365	JM	403	JOU	4200
HY	483	ASH	4442	ISE	434	EIN	4335	JM	404	JOU	4202
HY	485	AMH	4220	ISE	440	EIN	4243	JM	407	JOU	4004
HY	486	AMH	4231	ISE	441	EIN	4105	JM	408	JOU	4302
HY	487	AMH	4270	ISE	442	EIN	4212	JM	409	MMC	4200
HY	491	SSI	4601	ISE	451	ESI	4560	JM	413	JOU	4300
HY	492	SSI	4602	ISE	452	ESI	4221	JM	415	JOU	4800
HY	493	SSI	4603	ISE	453	ESI	4523	JM	419	MMC	4301
HY	496	HIS	4905	ISE	462	ESI	4235	JM	420	JOU	4304
HY	497	HIS	4970	ISE	470	ESI	4312	JM	432	JOU	4301
HY	501	EUH	5934	ISE	471	ESI	4313	JM	442	JOU	4602
HY	502	AMH	5930	ISE	474	STA	4603	JM	450	JOU	4946
HY	503	LAH	5934	ISE	480	ESI	4545	JM	465	JOU	4700
HY	504	EUH	5546	ISE	481	ESI	4554	JM	490	JOU	4930
HY	505	ASH	5388	ISE	490	EIN	4937	JM	496	JOU	4905
HY	596	AMH	5905	ISE	496	EIN	4905	JM	499	JOU	4949
HY	596	AMH	5934	ISE	497	EIN	4944	LA	440	LAS	4935
HY	602	HIS	6060	ISE	499	ESI	4935	LA	496	LAS	4905
HY	603	HIS	6061	ISE	540	EIN	5244	LA	640	LAS	6938
HY	613	EUH	6126	ISE	551	ESI	5570	LA	696	LAS	6905
HY	614	AMH	6379	ISE	552	ESI	5571	LA	699	LAS	6971
HY	618	EUH	6213	ISE	557	ESI	5125	LAE	271	LAA	2710
HY	619	EUH	6226	ISE	558	ESI	5135	LAE	272	LAA	2711
HY	620	EUH	6298	ISE	562	ESI	5236	LAE	331	LAA	3350 L
HY	623	EUH	6289	ISE	570	ESI	5307	LAE	332	LAA	3351 L
HY	624	EUH	6339	ISE	571	ESI	5308	LAE	333	LAA	3352 L
HY	625	EUH	6342	ISE	572	ESI	5309	LAE	341	LAA	3420
HY	626	EUH	6320	ISE	601	ESI	6408	LAE	342	LAA	3421
HY	633	EUH	6508	ISE	602	ESI	6438	LAE	353	LAA	3510
HY	640	HIS	6148	ISE	603	ESI	6439	LAE	363	LAA	3530
HY	641	AMH	6549	ISE	604	ESI	6417	LAE	421	LAA	4930
HY	642	AMH	6393	ISE	605	ESI	6418	LAE	431	LAA	4355 L
HY	643	AMH	6498	ISE	606	ESI	6429	LAE	432	LAA	4356 L
HY	646	AMH	6117	ISE	607	ESI	6458	LAE	433	LAA	4357 L
HY	647	AMH	6149	ISE	608	ESI	6448	LAE	442	LAA	4210
HY	648	AMH	6169	ISE	609	ESI	6499	LAE	481	LAA	4830
HY	649	AMH	6179	ISE	610	EIN	6348	LAE	496	LAA	4905
HY	650	AMH	6201	ISE	611	ESI	6526	LIN	200	LIN	2000
HY	651	AMH	6239	ISE	612	ESI	6527	LIN	290	LIN	2010
HY	652	AMH	6279	ISE	620	ESI	6358	LIN	320	LIN	3340
HY	660	AFH	6934	ISE	621	EIN	6357	LIN	321	LIN	3611
HY	675	LAH	6938	ISE	622	EIN	6358	LIN	360	LIN	3700
HY	682	ASH	6904	ISE	630	EIN	6338	LIN	363	LIN	3371
HY	696	HIS	6905	ISE	631	EIN	6318	LIN	380	LIN	3221
HY	697	HIS	6910	ISE	632	EIN	6367	LIN	496	LIN	4905
HY	698	HIS	6940	ISE	635	EIN	6508	LIN	505	LIN	5025
HY	699	HIS	6971	ISE	636	EIN	6509	LIN	556	PHI	5225
HY	700	HIS	7289	ISE	640	EIN	6246 L	LIN	594	LIN	5715
HY	799	HIS	7980	ISE	641	EIN	6249	LIN	602	LIN	6136
IN	133	ITA	1120	ISE	642	EIN	6247	LIN	605	LIN	6435
IN	134	ITA	1121	ISE	651	ESI	6529	LIN	610	LIN	6222
IN	135	ITA	1122	ISE	652	ESI	6528	LIN	611	LIN	6240
IN	305	ITA	3400	ISE	653	EIN	6115	LIN	612	LIN	6241
IN	327	ITW	3100	ISE	654	ECM	6260	LIN	620	LIN	6322
IN	328	ITW	3101	ISE	657	ESI	6127	LIN	621	LIN	6380
IN	329	ITW	3102	ISE	658	ESI	6136	LIN	622	LIN	6381
IN	496	ITA	4905	ISE	659	ESI	6137	LIN	624	LIN	6436
IR	315	IND	3311	ISE	660	ESI	6222	LIN	630	LIN	6128
IR	331	IND	3215	ISE	661	EIN	6388	LIN	631	LIN	6129
IR	332	IND	3216	ISE	662	ESI	6239	LIN	640	LIN	6118
IR	333	IND	3217	ISE	670	ESI	6316	LIN	650	LIN	6416
IR	341	IND	3420	ISE	671	ESI	6317	LIN	652	LIN	6415
IR	342	IND	3421	ISE	676	ESI	6546	LIN	655	LIN	6600
IR	343	IND	3430	ISE	677	ESI	6547	LIN	656	ENG	6571
IR	372	IND	3100	ISE	678	ESI	6349	LIN	657	LIN	6622
IR	373	IND	3130	ISE	679	EIN	6939	LIN	661	LIN	6377
IR	375	IND	3422	ISE	680	ESI	6337	LIN	665	LIN	6401
IR	402	IND	4240	ISE	681	ESI	6548	LIN	690	LIN	6932
IR	431	IND	4222	ISE	684	ESI	6508	LIN	696	LIN	6905
IR	432	IND	4223	ISE	685	ESI	6509	LIN	697	LIN	6910
IR	433	IND	4226	ISE	686	ESI	6558	LIN	698	LIN	6940
IR	443	IND	4500	ISE	690	EIN	6918	LIN	699	LIN	6971
ISE	300	EIN	3304	ISE	696	EIN	6905	LIN	799	LIN	7980
ISE	301	ESI	3305	ISE	697	EIN	6910	LN	133	LAT	1120
ISE	302	ESI	3305 L	ISE	698	EIN	6940	LN	134	LAT	1121
ISE	330	EIN	3314 L	ISE	699	EIN	6971	LN	135	LAT	1122
ISE	331	EIN	3373	ISE	797	EIN	7933	LN	307	LAT	3230
ISE	350	EIN	3114	ISE	799	EIN	7980	LN	308	LAT	3231
ISE	351	ESI	3502	JE	133	JAP	1120	LN	309	LAT	3232
ISE	352	ESI	3154	JE	134	JAP	1121	LN	496	LNW	4905
ISE	357	ESI	3123	JE	135	JAP	1122	LN	596	LNW	5905
ISE	401	ESI	4567	JM	118	MMC	1000	LN	600	LNW	6902
ISE	402	ESI	4568	JM	201	MMC	2100	LN	620	LAT	6840

TABLE 2

LN	696	LNW	6905	LW	678	LAW	6286	MCS	625	ZOO	6226
LN	697	LNW	6910	LW	679	LAW	6951	MCS	628	EES	6106
LN	698	LNW	6940	LW	680	LAW	6950	MCS	631	BOT	6316 C
LN	699	LNW	6971	LW	681	LAW	6450	MSC	632	BOT	6326 C
LW	501	LAW	5000	LW	682	LAW	6125	MCS	633	PCB	6176
LW	502	LAW	5001	LW	683	LAW	6720	MCS	634	PCB	6176 L
LW	511	LAW	5791	LW	684	LAW	6936	MCS	635	BOT	6256 C
LW	521	LAW	5300	LW	685	LAW	6740	MCS	636	PCB	6216
LW	522	LAW	5301	LW	686	LAW	6726	MCS	647	PCB	6256
LW	531	LAW	5400	LW	687	LAW	6261	MCS	649	APB	6933
LW	532	LAW	5401	LW	688	LAW	6380	MCS	650	MCB	6275
LW	541	LAW	5501	LW	689	LAW	6381	MCS	651	MCB	6937
LW	542	LAW	5502	LW	690	LAW	6710	MCS	652	MCB	6506 C
LW	571	LAW	5700	LW	691	LAW	6715	MCS	653	MCB	6506 L
LW	572	LAW	5701	LW	692	LAW	6725	MCS	654	MCB	6913
LW	581	LAW	5100	LW	693	LAW	6952	MCS	656	MCB	6127
LW	591	LAW	5792	LW	694	LAW	6935	MCS	657	MCB	6417 C
LW	592	LAW	5793	LW	695	LAW	6930	MCS	658	MCB	6407 C
LW	600	LAW	6010	LW	696	LAW	6905	MCS	659	PCB	6236
LW	601	LAW	6020	LW	700	LAW	6940	MCS	660	PCB	6236 L
LW	602	LAW	6062	LW	701	LAW	7941	MCS	661	MCB	6757 C
LW	603	LAW	6063	LW	702	LAW	7942	MCS	662	MCB	6306
LW	604	LAW	6080	LWT	601	LAW	7602	MCS	663	MCB	6717 C
LW	605	LAW	6050	LWT	602	LAW	7603	MCS	664	MCB	6520
LW	606	LAW	6030	LWT	603	LAW	7604	MCS	666	MCB	6056
LW	607	LAW	6065	LWT	604	LAW	7650	MCS	667	MCB	6051 C
LW	608	LAW	6035	LWT	605	LAW	7611	MCS	668	MCB	6457 C
LW	609	LAW	6064	LWT	606	LAW	7612	MCS	669	MCB	6937
LW	610	LAW	6210	LWT	607	LAW	7613	MCS	696	MCB	6905
LW	611	LAW	6260	LWT	608	LAW	7614	MCS	697	MCB	6910
LW	612	LAW	6051	LWT	609	LAW	7623	MCS	698	MCB	6940
LW	613	LAW	6250	LWT	610	LAW	7624	MCS	699	MCB	6971
LW	614	LAW	6220	LWT	611	LAW	7625	MCS	750	MCB	7922
LW	615	LAW	6225	LWT	612	LAW	7626	MCS	751	MCB	7914
LW	616	LAW	6235	LWT	613	LAW	7617	MCS	799	MCB	7980
LW	617	LAW	6200	LWT	614	LAW	7640	ME	280	EML	2002
LW	619	LAW	6750	LWT	615	LAW	7641	ME	301	EML	3005
LW	620	LAW	6304	LWT	616	LAW	7632	ME	320	EML	3301 C
LW	621	LAW	6302	LWT	617	LAW	7911	ME	360	EML	3100
LW	623	LAW	6360	LWT	618	LAW	7633	ME	361	EML	3102 L
LW	625	LAW	6330	LWT	619	LAW	7931	ME	362	EML	3101 L
LW	626	LAW	6331	LWT	696	LAW	7905	ME	380	EML	3202
LW	627	LAW	6335	LWT	697	LAW	7910	ME	381	EML	3260
LW	630	LAW	6430	LWT	698	LAW	7940	ME	382	EML	3321
LW	631	LAW	6433	MAF	101	AFR	1101 C	ME	401	EML	4920
LW	632	LAW	6440	MAF	102	AFR	1111 C	ME	402	EML	4936
LW	633	LAW	6624	MAF	103	AFR	1120 C	ME	430	EML	4140
LW	635	LAW	6422	MAF	201	AFR	2130 C	ME	431	EML	4141
LW	636	LAW	6420	MAF	202	AFR	2131 C	ME	439	EML	4263
LW	637	LAW	6405	MAF	203	AFR	2140 C	ME	445	EML	4522
LW	638	LAW	6460	MAF	311	AFR	3220 C	ME	450	EML	4709
LW	640	LAW	6520	MAF	312	AFR	3230 C	ME	460	EML	4419
LW	641	LAW	6530	MAF	313	AFR	3231 C	ME	461	EML	4411
LW	642	LAW	6550	MAF	411	AFR	4201 C	ME	462	EML	4411 L
LW	643	LAW	6480	MAF	412	AFR	4210 C	ME	463	EML	4414
LW	644	LAW	6540	MAF	413	AFR	4211 C	ME	464	EML	4414 L
LW	645	LAW	6542	MCA	301	MAG	3732	ME	465	EML	4601
LW	646	LAW	6548	MCA	303	MAG	3220	ME	466	EML	4601 L
LW	647	LAW	6545	MCA	306	MAG	3312	ME	467	EML	4450
LW	648	LAW	6552	MCA	310	MAG	3052	ME	468	EML	4926
LW	649	LAW	6570	MCA	333	MAG	3503	ME	469	EML	4600
LW	650	LAW	6525	MCA	400	MAG	4941	ME	470	EML	4416
LW	651	LAW	6505	MCA	402	MAG	4642	ME	480	EML	4220 C
LW	652	LAW	6004	MCA	404	MAG	4062	ME	482	EML	4500
LW	653	LAW	6503	MCA	407	MAG	4225	ME	483	EML	4501
LW	654	LAW	6560	MCS	200	APB	2170	ME	484	EML	4502
LW	655	LAW	6544	MCS	201	APB	2170 L	ME	496	EML	4905
LW	656	LAW	6470	MCS	302	MCB	3020 C	ME	497	EML	4945
LW	657	LAW	6112	MCS	303	MCB	3013 L	ME	499	EML	4949
LW	658	LAW	6111	MCS	308	ZOO	3603	ME	520	EML	5311
LW	659	LAW	6040	MCS	309	PCB	3253 L	ME	535	EML	5526
LW	660	LAW	6600	MCS	405	PCB	4233	ME	540	EML	5224
LW	661	LAW	6601	MCS	406	MCB	4203	ME	550	EML	5714
LW	662	LAW	6650	MCS	408	PCB	4253	ME	555	EML	5152
LW	663	LAW	6620	MCS	410	MCB	4503 C	ME	560	EML	5105
LW	664	LAW	6610	MCS	416	APB	4544	ME	561	EML	5104
LW	665	LAW	6616	MCS	417	APB	4544 L	ME	577	EML	5605
LW	666	LAW	6621	MCS	419	MCB	4403	ME	580	EML	5273
LW	668	LAW	6605	MCS	420	MCB	4413	ME	581	EML	5223
LW	669	LAW	6751	MCS	421	MCB	4303	ME	589	EML	5527
LW	670	LAW	6721	MCS	422	MCB	4403 L	ME	591	EML	5515
LW	671	LAW	6320	MCS	423	PCB	4136 L	ME	593	EML	5504
LW	672	LAW	6510	MCS	455	PCB	4233 L	ME	594	EML	5505
LW	673	LAW	6340	MCS	466	MCB	4203 L	ME	620	EML	6306 L
LW	674	LAW	6730	MCS	496	MCB	4905	ME	630	EML	6506
LW	675	LAW	6760	MCS	507	MCB	5605 C	ME	631	EML	6507
LW	676	LAW	6523	MCS	584	ENN	5626	ME	639	EML	6278
LW	677	LAW	6285	MCS	586	APB	5405 L	ME	641	EML	6254

ME	650	EML	6715
ME	651	EML	6159
ME	652	EML	6716
ME	653	EML	6717
ME	654	EML	6718
ME	655	EML	6154
ME	656	EML	6155
ME	657	EML	6157
ME	658	EML	6156
ME	659	EML	6153
ME	660	EML	6108
ME	661	EML	6103
ME	663	EML	6452
ME	664	EML	6131
ME	665	EML	6132
ME	666	EML	6417
ME	667	EML	6418
ME	67S	EML	6606
ME	676	EML	6607
ME	680	EML	6272
ME	683	EML	6274
ME	684	EML	627S
ME	685	EML	6276
ME	686	EML	6277
ME	687	EML	6508
ME	690	EML	6911
ME	692	EML	6906
ME	695	EML	6935
ME	696	EML	6905
ME	697	EML	6910
ME	698	EML	6940
ME	699	EML	6971
ME	799	EML	7980
MED	300	EXP	3719 L
MED	310	PAS	3007
MED	320	PAS	3021
MED	331	APB	3203
MED	341	PAS	3024
MED	342	PAS	3006
MED	343	PAS	3005
MED	345	PAS	3020
MED	346	PAS	3003
MED	351	BSC	3023
MED	370	PAS	3023
MED	372	PAS	3000
MED	373	PAS	3001
MED	374	PAS	3002
MED	400	BMS	4022
MED	405	BMS	4025
MED	406	BMS	4021
MED	407	BMS	4023
MED	408	BMS	4024
MED	436	BMS	4012
MED	437	BMS	4010
MED	438	BMS	4011
MED	451	PAS	4200
MED	452	PAS	4220
MED	453	PAS	4240
MED	454	PAS	4100
MED	455	PAS	4170
MED	456	PAS	4004
MED	457	PAS	4110
MED	458	PAS	4150
MED	459	PAS	4300
MED	460	PAS	4400
MED	461	PAS	4320
MED	462	PAS	4115
MED	463	PAS	4420
MED	464	PAS	4160
MED	465	PAS	4140
MED	466	PAS	4125
MED	467	PAS	4040
MED	468	PAS	4260
MED	469	PAS	4042
MED	470	PAS	4120
MED	471	PAS	4305
MED	472	PAS	4105
MED	496	BMS	4905
MED	501	BMS	5100 C
MED	566	BMS	5465
MED	572	BCC	5151
MED	579	BCC	5120
MED	580	BMS	5830
MED	583	BCC	5170
MED	584	BCC	5100
MED	585	BCC	5150
MED	586	BCC	5130
MED	588	GMS	5930
MED	589	GMS	5931
MED	590	GMS	5932
MED	591	BCC	5110
MED	592	BCC	5140
MED	593	BCC	5160
MED	594	GMS	5933
MED	595	GMS	5934
MED	596	GMS	5905
MED	597	GMS	5936
MED	598	GMS	5937
MED	599	GMS	5938
MED	600	GMS	6700
MED	601	GMS	6703
MED	603	GMS	6701
MED	604	BMS	6173 C
MED	605	BMS	617S C
MED	606	BMS	6150
MED	607	BMS	6185
MED	608	BMS	6176
MED	609	BMS	6120 C
MED	610	BMS	6700 C
MED	611	BMS	6601
MED	615	BMS	6260 C
MED	616	BMS	6230 C
MED	617	BMS	6231
MED	619	BMS	6573
MED	620	BMS	6574
MED	621	BMS	6575
MED	622	BMS	6531
MED	623	BMS	6510
MED	624	BMS	6579
MED	625	BMS	6576
MED	626	BMS	6536
MED	627	BMS	6560 C
MED	628	BMS	6535
MED	629	BMS	6577
MED	632	BMS	6182 C
MED	633	GMS	6710
MED	635	GMS	6732
MED	636	BMS	6512
MED	637	BMS	6537
MED	638	BMS	6578
MED	639	BMS	6514
MED	640	BMS	6612
MED	641	BMS	6605
MED	642	BMS	6640
MED	643	BMS	6613
MED	644	BMS	6614
MED	645	BMS	6615
MED	646	BMS	6621
MED	647	BMS	6620
MED	648	BMS	6606
MED	649	BMS	6616
MED	650	BMS	6322 C
MED	651	BMS	6321
MED	652	BMS	6330
MED	653	BMS	6330 L
MED	654	BMS	6324
MED	655	BMS	6360
MED	656	BMS	6323
MED	657	BMS	6350 C
MED	658	BMS	6351 C
MED	659	BMS	6314
MED	660	BMS	6312 L
MED	661	BMS	6312
MED	662	BMS	6352 C
MED	663	BMS	6305 C
MED	664	BMS	6331
MED	665	BMS	6353 C
MED	666	BMS	6310
MED	667	BMS	6311
MED	668	BMS	6354 C
MED	669	BMS	6930
MED	670	BMS	6400 C
MED	671	BMS	6463
MED	672	BMS	6468
MED	673	BMS	6466
MED	674	BMS	6420
MED	676	BMS	6131 C
MED	677	BMS	6532
MED	678	BMS	6166 C
MED	679	BMS	6105
MED	690	BMS	6630
MED	691	BMS	6641
MED	692	BMS	6631
MED	693	BMS	6642
MED	694	BMS	6642 L
MED	696	GMS	6905
MED	697	GMS	6910
MED	698	GMS	6940
MED	699	GMS	6971
MED	701	BMS	7421
MED	702	BMS	7422
MED	703	BMS	7423
MED	704	BMS	7467
MED	711	GMS	7711
MED	712	GMS	7712
MED	713	GMS	7713
MED	714	GMS	7714
MED	715	GMS	7721
MED	716	BMS	7533
MED	717	BMS	7513
MED	718	GMS	7740
MED	719	GMS	7741
MED	720	GMS	7742
MED	721	BMS	7262 C
MED	722	BMS	7200 C
MED	723	BMS	7210 C
MED	724	BMS	7220 C
MED	731	BMS	7571
MED	732	BMS	7570
MED	733	BMS	7572
MED	741	BMS	7142 C
MED	742	BMS	7165 C
MED	743	GMS	7731
MED	744	GMS	7720
MED	745	GMS	7730
MED	746	BMS	7143 C
MED	750	BMS	7932
MED	751	BMS	7931
MED	752	BMS	7313
MED	760	BMS	7643
MED	761	BMS	7660
MED	765	GMS	7733
MED	766	GMS	7750
MED	767	GMS	7760
MED	768	GMS	7715
MED	770	GMS	7743
MED	799	GMS	7980
MET	201	MLS	2030
MET	301	MLS	3308
MET	302	MLS	3308 L
MET	303	MLS	3627
MET	304	MLS	3627L
MET	305	MLS	3628
MET	306	MLS	3628 L
MET	401	MLS	4830 C
MET	402	MLS	4840 C
MET	403	MLS	4831 C
MET	404	MLS	4841 C
MET	405	MLS	4832 C
MET	406	MLS	4842 C
MET	407	MLS	4833 C
MET	408	MLS	4843 C
MET	409	MLS	4850
MET	410	MLS	4851
MET	411	MLS	4852
MET	412	MLS	4853
MET	413	MLS	4934 C
MET	414	MLS	4935 C
MET	415	MLS	4936 C
MGT	310	MAN	3010
MGT	350	MAN	3301
MGT	355	MAN	3151
MGT	410	MAN	4201
MGT	430	MAN	4600
MGT	450	MAN	4310
MGT	455	MAN	4109
MGT	460	MAN	4410
MGT	470	QMB	4701
MGT	471	QMB	4702
MGT	472	QMB	4703
MGT	480	MAN	4720
MGT	481	MAN	4052
MGT	496	MAN	4905
MGT	510	MAN	5205
MGT	570	MAN	5511
MGT	610	MAN	6051
MGT	611	MAN	6207
MGT	612	MAN	6206
MGT	614	MAN	6933
MGT	615	MAN	6107
MGT	616	MAN	6205
MGT	650	MAN	6321
MGT	660	MAN	6421
MGT	670	QMB	6827

TABLE 2

MGT	671	QMB	6607	MS	316	MAE	3822	MS	610	MAS	6158
MGT	672	QMB	6697	MS	317	MAE	3823	MS	611	MAS	6329
MGT	673	QMB	6857	MS	318	MAD	3104	MS	614	MAD	6407
MGT	674	QMB	6865	MS	320	MTG	3212	MS	615	MAP	6356
MGT	675	QMB	6877	MS	321	MTG	3213	MS	616	MAP	6357
MGT	676	QMB	6837	MS	322	MTG	3214	MS	617	MAP	6358
MGT	677	QMB	6808	MS	324	MAS	3113	MS	618	MAP	6467
MGT	678	QMB	6809	MS	325	MAS	3301	MS	619	MAP	6468
MGT	690	MAN	6931	MS	326	MAS	3302	MS	620	MAP	6469
MGT	696	MAN	6905	MS	328	MAS	3114	MS	621	MTG	6266
MGT	697	MAN	6910	MS	330	MAE	3836	MS	622	MTG	6267
MGT	698	MAN	6940	MS	331	MAE	3837	MS	623	MTG	6268
MGT	699	MAN	6971	MS	332	MAE	3838	MS	624	MHF	6306
MGT	790	MAN	7925	MS	345	MAC	3472	MS	625	MHF	6307
MGT	799	MAN	7980	MS	346	MAC	3473	MS	626	MHF	6308
MIS	101	MIS	1022 C	MS	347	MAC	3474	MS	631	MAS	6346
MIS	102	MIS	1300 C	MS	400	MAE	4830	MS	632	MAS	6347
MIS	103	MIS	1220 C	MS	401	MAE	4831	MS	633	MAS	6348
MIS	105	MIS	1654	MS	402	MAE	4870	MS	635	MTG	6237
MIS	111	MIS	1490 L	MS	405	MHF	4404	MS	636	MTG	6227
MIS	112	MIS	1491 L	MS	406	MAS	4115	MS	637	MTG	6228
MIS	113	MIS	1492 L	MS	407	MAP	4413	MS	638	MTG	6256
MIS	201	MIS	2601 C	MS	408	MAP	4414	MS	639	MTG	6257
MIS	202	MIS	2000 C	MS	409	MAP	4305	MS	640	MTG	6258
MIS	203	MIS	2300 C	MS	410	MAS	4124	MS	641	MAA	6616
MIS	211	MIS	2493 L	MS	411	MAD	4401	MS	642	MAA	6617
MIS	212	MIS	2495 L	MS	412	MAS	4156	MS	643	MAA	6618
MIS	213	MIS	2496 L	MS	413	MAA	4402	MS	645	MAA	6626
MIS	301	MIS	3610 C	MS	414	MAP	4423	MS	646	MAA	6627
MIS	302	MIS	3305 C	MS	415	MAP	4341	MS	647	MAA	6628
MIS	303	MIS	3404 C	MS	427	MAS	4103	MS	648	MAA	6236
MIS	401	MIS	4430 C	MS	428	MAS	4104	MS	649	MAA	6237
MIS	402	MIS	4420 C	MS	429	MAS	4105	MS	650	MAA	6238
MIS	403	MIS	4421 C	MS	431	MAS	4311	MS	651	MAA	6406
MIS	404	MIS	4101	MS	432	MAS	4312	MS	652	MAA	6407
MKG	331	MAR	3023	MS	433	MAS	4313	MS	653	MAA	6408
MKG	352	MAR	3503	MS	441	MAA	4226	MS	656	MAD	6206
MKG	362	MAR	3203	MS	442	MAA	4227	MS	657	MAD	6207
MKG	421	MAR	4243	MS	443	MAA	4228	MS	658	MAD	6208
MKG	431	MAR	4713	MS	445	MAA	4211	MS	661	MTG	6346
MKG	441	MAR	4403	MS	446	MAA	4212	MS	662	MTG	6347
MKG	451	MAR	4303	MS	447	MAA	4213	MS	663	MTG	6348
MKG	461	MAR	4153	MS	451	MHF	4102	MS	666	MTG	6276
MKG	471	MAR	4613	MS	452	MTG	4302	MS	667	MTG	6277
MKG	472	MAR	4614	MS	453	MTG	4303	MS	668	MTG	6278
MKG	481	MAR	4763	MS	455	MAD	4504	MS	690	MAT	6932
MKG	491	MAR	4213	MS	456	MTG	4233	MS	696	MAT	6905
MKG	493	MAR	4933	MS	457	MTG	4234	MS	697	MAT	6910
MKG	496	MAR	4905	MS	464	MAP	4316	MS	698	MAE	6940
MKG	531	MAR	5055	MS	465	MAP	4317	MS	699	MAT	6971
MKG	621	MAR	6246	MS	467	MAA	4102	MS	701	MTG	7396
MKG	631	MAR	6806	MS	468	MAA	4103	MS	702	MTG	7397
MKG	639	MAR	6717	MS	469	MAA	4104	MS	703	MTG	7398
MKG	652	MAR	6506	MS	470	MAD	4203	MS	711	MAP	7475
MKG	665	MAR	6516	MS	471	MAD	4204	MS	712	MAP	7436
MKG	671	MAR	6616	MS	490	MAT	4930	MS	713	MAP	7437
MKG	673	MAR	6606	MS	496	MAT	4905	MS	714	MAP	7438
MKG	690	MAR	6933	MS	497	MAS	4321	MS	745	MAS	7215
MKG	696	MAR	6905	MS	498	MAS	4322	MS	746	MAS	7216
MKG	697	MAR	6910	MS	501	MAP	5304	MS	747	MAS	7217
MKG	698	MAR	6940	MS	502	MAS	5156	MS	755	MAA	7526
MKG	699	MAR	6971	MS	503	MAA	5402	MS	756	MAA	7527
MKG	752	MAR	7518	MS	504	MAP	5423	MS	757	MAA	7528
MKG	774	MAR	7628	MS	505	MAP	5345	MS	765	MAS	7396
MKG	778	MAR	7625	MS	509	MAA	5506	MS	766	MAS	7397
MKG	790	MAR	7639	MS	510	MAA	5507	MS	767	MAS	7398
MKG	799	MAR	7980	MS	517	MAD	5405	MS	771	MAP	7477
MS	100	MAC	1104	MS	529	MAS	5334	MS	772	MAP	7478
MS	101	MAT	1033	MS	531	MAS	5331	MS	799	MAT	7980
MS	102	MAC	1132	MS	532	MAS	5332	MSC	101	MUT	1111
MS	103	MAC	1132 L	MS	533	MAS	5333	MSC	102	MUT	1112
MS	200	MAC	2144	MS	541	MAA	5226	MSC	103	MUT	1113
MS	201	MAC	2223	MS	542	MAA	5227	MSC	104	MUT	1241
MS	204	MAC	2233	MS	543	MAA	5228	MSC	105	MUT	1242
MS	211	MGF	2202	MS	547	MAA	5102	MSC	106	MUT	1243
MS	300	MTB	3364	MS	548	MAA	5103	MSC	121	MVK	1411
MS	301	MAC	3311	MS	549	MAA	5104	MSC	123	MVK	1413
MS	302	MAC	3312	MS	551	MHF	5107	MSC	125	MVV	1411
MS	303	MAC	3313	MS	552	MTG	5316	MSC	127	MVS	1411
MS	304	MAC	3314	MS	553	MTG	5317	MSC	129	MVS	1412
MS	305	MAP	3302	MS	566	MAD	5306	MSC	131	MVS	1413
MS	306	MAC	3224	MS	567	MAD	5307	MSC	133	MVS	1414
MS	307	MHF	3202	MS	601	MAP	6505	MSC	135	MVW	1411
MS	308	MAC	3411	MS	602	MAP	6506	MSC	137	MVW	1413
MS	310	MAE	3810	MS	603	MAP	6507	MSC	139	MVW	1412
MS	311	MAE	3811	MS	607	MAP	6417	MSC	141	MVW	1414
MS	312	MAE	3812	MS	608	MAP	6418	MSC	143	MVB	1412
MS	313	MAS	3203	MS	609	MAP	6216	MSC	145	MVB	1411

MSC	147	MVB	1413
MSC	148	MVB	1414
MSC	149	MVB	1415
MSC	151	MVP	1411
MSC	153	MVW	1415
MSC	155	MVS	1415
MSC	157	MVK	1412
MSC	158	MVO	1414
MSC	159	MVO	1413
MSC	170	MUN	1210
MSC	171	MUN	1310
MSC	172	MUN	1330
MSC	173	MUN	1320
MSC	174	MUN	1100
MSC	175	MUN	1470
MSC	176	MUN	1710
MSC	181	MUN	1310
MSC	182	MUN	1460
MSC	201	MUT	2116
MSC	202	MUT	2117
MSC	203	MUT	2118
MSC	204	MUT	2246
MSC	205	MUT	2247
MSC	206	MUT	2248
MSC	210	MUL	2011
MSC	211	MUL	2112
MSC	212	MUL	2113
MSC	217	MUL	2111
MSC	221	MVK	2421
MSC	223	MVK	2423
MSC	225	MVV	2421
MSC	227	MVS	2421
MSC	229	MVS	2422
MSC	231	MVS	2423
MSC	233	MVS	2424
MSC	235	MVW	2421
MSC	237	MVW	2423
MSC	239	MVW	2422
MSC	241	MVW	2424
MSC	243	MVB	2422
MSC	245	MVB	2421
MSC	247	MVB	2423
MSC	248	MVB	2414
MSC	249	MVB	2425
MSC	251	MVP	2421
MSC	253	MVW	2425
MSC	255	MVS	2425
MSC	257	MVK	2422
MSC	258	MVO	2424
MSC	259	MVO	2423
MSC	260	MUE	2402
MSC	261	MUE	2111
MSC	262	MVK	2112
MSC	263	MVK	2111
MSC	264	MVK	2121
MSC	265	MVK	2121
MSC	266	MVK	2121
MSC	275	MUE	2470
MSC	277	MUE	2440
MSC	279	MUE	2450
MSC	281	MUE	2460
MSC	283	MUE	2431
MSC	284	MUE	2403
MSC	303	MUT	3611
MSC	304	MUT	3612
MSC	305	MUT	3321
MSC	306	MUT	3322
MSC	307	MUC	3201
MSC	308	MUC	3202
MSC	311	MUL	3351
MSC	312	MUL	3341
MSC	314	MUL	3362
MSC	315	MUH	3541
MSC	316	MUR	3401
MSC	317	MUH	3211
MSC	318	MUH	3212
MSC	319	MUH	3213
MSC	321	MVL	3431
MSC	323	MVK	3433
MSC	325	MVV	3431
MSC	327	MVS	3431
MSC	329	MVS	3432
MSC	331	MVS	3433
MSC	333	MVS	3434
MSC	335	MVW	3431
MSC	337	MVW	3433
MSC	339	MVW	3432
MSC	341	MVW	3434
MSC	343	MVB	3432
MSC	345	MVB	3431
MSC	347	MVB	3433
MSC	348	MVB	3434
MSC	349	MVB	3435
MSC	351	MVP	3431
MSC	353	MVW	3435
MSC	355	MVS	3435
MSC	357	MVK	3432
MSC	358	MVO	3434
MSC	359	MVO	3433
MSC	366	MUE	3093
MSC	367	MUE	3310
MSC	368	MUE	3320
MSC	369	MUE	3330
MSC	370	MUN	3210
MSC	371	MUN	3310
MSC	372	MUN	3330
MSC	373	MUN	3320
MSC	374	MUN	3100
MSC	375	MUN	3470
MSC	376	MUN	3710
MSC	381	MUN	3310
MSC	382	MUN	3460
MSC	383	MUO	3501
MSC	386	MUN	3340
MSC	387	MUN	3490
MSC	390	MUE	3401
MSC	403	MUT	4411
MSC	404	MUT	4421
MSC	405	MUG	4101
MSC	406	MUG	4102
MSC	407	MUC	4301
MSC	408	MUG	4201
MSC	410	MUS	5665
MSC	411	MUL	4371
MSC	412	MUH	4116
MSC	413	MUL	4811
MSC	414	MUH	4331
MSC	415	MUL	4361
MSC	416	MUR	4801
MSC	417	MUH	4561
MSC	418	MUH	4501
MSC	419	MUL	4813
MSC	421	MVK	4441
MSC	423	MVK	4443
MSC	425	MVV	4441
MSC	427	MVS	4441
MSC	429	MVS	4442
MSC	431	MVS	4443
MSC	433	MVS	4444
MSC	435	MVW	4441
MSC	437	MVW	4443
MSC	439	MVW	4442
MSC	441	MVW	4444
MSC	443	MVB	4442
MSC	445	MVB	4441
MSC	447	MVB	4443
MSC	448	MVB	4444
MSC	449	MVB	4445
MSC	451	MVP	4441
MSC	453	MVW	4445
MSC	455	MVS	4445
MSC	457	MVK	4442
MSC	458	MVO	4444
MSC	459	MVO	4443
MSC	460	MUE	4412
MSC	461	MUE	4411
MSC	462	MUE	4404
MSC	463	MUE	4343
MSC	465	MUE	4480
MSC	471	MUS	4201
MSC	472	MUS	4202
MSC	481	MUT	4641
MSC	482	MVS	4145
MSC	496	MUS	4905
MSC	601	MUT	6051
MSC	607	MUC	6401
MSC	608	MUT	6751
MSC	609	MUT	6930
MSC	611	MUS	6716
MSC	612	MUE	6396
MSC	613	MUH	6050
MSC	615	MUH	6930
MSC	616	MUL	6931
MSC	621	MVO	6460
MSC	622	MVO	6250
MSC	659	MUS	6955 C
MSC	667	MUE	6932
MSC	669	MUE	6143
MSC	670	MUN	6000
MSC	696	MUS	6905
MSC	697	MUS	6910
MSC	698	MUS	6940
MSC	699	MUS	6971
MSC	709	MUT	7930
MSC	715	MUH	7930
MSC	716	MUL	7931
MSC	721	MVO	7470
MSC	722	MVO	7260
MSC	767	MUE	7932
MSC	796	MUS	7905
MSE	100	EMA	1020
MSE	300	EMA	3010 L
MSE	301	EMA	3012 L
MSE	302	EMA	3123
MSE	303	EMA	3050
MSE	304	EMA	3066
MSE	310	EMA	3413
MSE	350	EMA	3080
MSE	360	EMA	3513
MSE	380	EMA	3040 L
MSE	390	EMA	3622 L
MSE	391	ETG	3530 L
MSE	392	ETG	3532
MSE	401	EMA	4121
MSE	402	EMA	4122
MSE	420	EMA	4124
MSE	421	EMA	4125
MSE	422	EMA	4714
MSE	440	EMA	4223 L
MSE	441	EMA	4224
MSE	442	EMA	4634 L
MSE	450	EMA	4623
MSE	451	EMA	4624
MSE	452	EMA	4314
MSE	453	EMA	4324
MSE	461	EMA	4524 L
MSE	471	EMA	4940
MSE	480	EMA	4643 L
MSE	481	EMA	4144
MSE	482	EMA	4145
MSE	483	EMA	4444
MSE	484	EMA	4645 C
MSE	491	EMA	4522 L
MSE	492	EMA	4632 L
MSE	493	EMA	4913
MSE	494	EMA	4914
MSE	496	EMA	4905
MSE	498	EMA	4935
MSE	499	EMA	4949
MSE	546	CHM	5511
MSE	561	CHM	5272
MSE	601	EMA	6106
MSE	602	EMA	6107
MSE	610	EMA	6110
MSE	611	EMA	6111
MSE	612	EMA	6112
MSE	615	EMA	6436
MSE	617	EMA	6437
MSE	620	EMA	6126
MSE	621	EMA	6127
MSE	622	EMA	6128
MSE	625	EMA	6136
MSE	630	EMA	6137
MSE	640	EMA	6226
MSE	641	EMA	6227
MSE	650	EMA	6316
MSE	651	EMA	6326
MSE	660	EMA	6516
MSE	661	EMA	6517
MSE	662	EMA	6518 L
MSE	663	EMA	6519 L
MSE	664	EMA	6507 C
MSE	665	EMA	6514 L
MSE	667	EMA	6508
MSE	670	EMA	6936
MSE	671	EMA	6937
MSE	675	EMA	6938
MSE	680	EMA	6146
MSE	681	EMA	6446
MSE	682	EMA	6147
MSE	683	EMA	6448
MSE	685	EMA	6580
MSE	686	EMA	6581
MSE	696	EMA	6905

TABLE 2

MSE	697	EMA	6910	NSG	305	NUU	3160 C	OCT	651	OTH	6827
MSE	698	EMA	6940	NSG	306	NUU	3161 C	OCT	655	OTH	6861 L
MSE	699	EMA	6971	NSG	307	NUU	3162 C	OCT	696	OTH	6905
MSE	701	EMA	7008	NSG	315	NUU	3210 C	OH	320	ORH	3813
MSE	799	EMA	7980	NSG	316	NUU	3220 C	OH	321	ORH	3803
NES	300	ENU	3002	NSG	317	NUU	3221 C	OH	331	ORH	3513 C
NES	301	ENU	3012	NSG	325	NUU	3431	OH	332	ORH	3514 C
NES	400	ENU	4101	NSG	405	NUU	4500 C	OH	333	ORH	3516
NES	401	ENU	4103	NSG	406	NUU	4501 C	OH	340	ORH	3611
NES	402	ENU	4104	NSG	407	NUU	4502 C	OH	343	ORH	3731
NES	403	ENU	4144	NSG	415	NUU	4225 C	OH	363	ORH	3231
NES	404	ENU	4505 L	NSG	416	NUU	4226 C	OH	364	ORH	3534
NES	405	ENU	4134	NSG	417	NUU	4227 C	OH	365	ORH	3815 C
NES	430	ENU	4304	NSG	418	NUR	4943 C	OH	400	ORH	4941
NES	431	ENU	4601	NSG	425	NUU	4432	OH	403	ORH	4931
NES	432	ENU	4405	NSG	430	NUR	4930	OH	420	ORH	4255
NES	435	ENU	4605	NSG	496	NUR	4905	OH	421	ORH	4232
NES	440	ENU	4612	NSG	572	NUR	5940 C	OH	422	ORH	4242 L
NES	451	ENU	4192	NSG	600	NUU	6350 C	OH	425	ORH	4255 L
NES	470	ENU	4704	NSG	601	NUU	6651	OH	441	ORH	4411
NES	496	ENU	4905	NSG	602	NUR	6650	OH	442	ORH	4263
NES	499	ENU	4944	NSG	603	NUR	6450 C	OH	443	ORH	4263 L
NES	500	ENU	5005	NSG	605	NUR	6451 C	OH	444	ORH	4264 L
NES	533	ENU	5414	NSG	606	NUU	6460	OH	462	ORH	4221
NES	540	ENU	5615 L	NSG	607	NUR	6660	OH	463	ORH	4221 L
NES	551	ENU	5195	NSG	608	NUU	6461	OH	496	ORH	4905
NES	555	ENU	5186	NSG	612	NUR	6460 C	PCL	201	POS	2041
NES	570	ENU	5176 L	NSG	613	NUR	6461 C	PCL	203	POT	2001
NES	580	ENU	5625	NSG	614	NUR	6462 C	PCL	207	CPO	2002
NES	584	ENU	5626	NSG	621	NUR	6550 C	PCL	209	INR	2002
NES	585	ENU	5306	NSG	622	NUR	6551 C	PCL	220	POS	2112
NES	586	ENV	5629	NSG	623	NUR	6552 C	PCL	221	PUP	2002
NES	600	ENU	6516 L	NSG	625	NUR	6350 C	PCL	310	INR	3102
NES	601	ENU	6517 L	NSG	626	NUR	6351 C	PCL	311	INR	3103
NES	610	ENU	6106	NSG	627	NUR	6352 C	PCL	315	POS	3263
NES	611	ENU	6107	NSG	628	NUR	6353 C	PCL	316	POS	3002
NES	612	ENU	6108	NSG	631	NUR	6253 C	PCL	317	POS	3204
NES	614	ENU	6117	NSG	632	NUR	6250 C	PCL	318	POS	3253
NES	616	ENU	6241	NSG	633	NUR	6251 C	PCL	319	PUP	3323
NES	617	ENU	6210	NSG	634	NUR	6252 C	PCL	320	POS	3443
NES	618	ENU	6167	NSG	640	NUR	6160 C	PCL	321	POS	3413
NES	619	ENU	6168	NSG	642	NUR	6161 C	PCL	322	POS	3233
NES	644	ENU	6257	NSG	643	NUR	6163 C	PCL	323	PUP	3204
NES	651	ENU	6197	NSG	645	NUR	6162 C	PCL	325	POS	3142
NES	652	ENU	6147	NSG	646	NUR	6164 C	PCL	326	CPO	3034
NES	653	ENU	6148	NSG	647	NUR	6165 C	PCL	327	CPO	3083
NES	655	ENU	6636	NSG	648	NUR	6166 C	PCL	329	POS	3122
NES	660	ENU	6126	NSG	653	NUR	6153 C	PCL	333	POS	3173
NES	661	ENU	6127	NSG	654	NUR	6150 C	PCL	335	POS	3606
NES	670	ENU	6725	NSG	655	NUR	6151 C	PCL	339	POS	3273
NES	673	ENU	6745	NSG	656	NUR	6152 C	PCL	340	CPO	3303
NES	674	ENU	6717	NSG	660	NUU	6650	PCL	341	CPO	3134
NES	678	ENU	6707	NSG	662	NUU	6462	PCL	342	CPO	3513
NES	680	ENU	6627	NSG	663	NUU	6463	PCL	343	CPO	3204
NES	682	ENU	6656 L	NSG	664	NUU	6464	PCL	365	POT	3314
NES	683	ENU	6307 L	NSG	665	NUU	6465	PCL	401	POS	4603
NES	685	ENU	6646	NSG	666	NUU	6466	PCL	402	POS	4604
NES	686	ENU	6657	NSG	667	NUU	6467	PCL	403	POS	4624
NES	690	ENU	6935	NSG	668	NUU	6468	PCL	404	INR	4403
NES	691	ENU	6936	NSG	670	NUU	6435	PCL	407	POT	4013
NES	692	ENU	6937	NSG	671	NUR	6945	PCL	408	POT	4044
NES	696	ENU	6905	NSG	690	NUR	6948	PCL	409	POT	4054
NES	697	ENU	6910	NSG	695	NUR	6931	PCL	410	POT	4414
NES	698	ENU	6940	NSG	696	NUR	6905	PCL	411	PAD	4003
NES	699	ENU	6971	NSG	697	NUR	6910	PCL	412	PUP	4003
NES	799	ENU	7980	NSG	698	NUR	6940	PCL	413	PAD	4034
NRO	100	NSC	1101 L	NSG	699	NUR	6971	PCL	414	PAD	4803
NRO	111	NSC	1110	OCT	201	OTH	2000	PCL	416	POS	4284
NRO	112	NSC	1121	OCT	300	OTH	3010	PCL	417	POS	4684
NRO	113	NSC	1122	OCT	302	OTH	3200 C	PCL	418	POS	4691
NRO	200	NSC	2102 L	OCT	361	OTH	3110 L	PCL	419	PUP	4313
NRO	211	NSC	2131	OCT	421	OTH	4320	PCL	422	POS	4424
NRO	212	NSC	2132	OCT	422	OTH	4321	PCL	424	PUP	4104
NRO	213	NSC	2140	OCT	431	OTH	4412	PCL	427	PUP	4404
NRO	300	NSC	3103 L	OCT	441	OTH	4421	PCL	428	POS	4246
NRO	311	NSC	3214 C	OCT	442	OTH	4422	PCL	430	POS	4930
NRO	312	NSC	3215 C	OCT	461	OTH	4810	PCL	435	INR	4204
NRO	313	NSC	3213	OCT	462	OTH	4811	PCL	436	INR	4114
NRO	331	NSC	3221	OCT	463	OTH	4812	PCL	437	INR	4502
NRO	332	NSC	3222	OCT	465	OTH	4845	PCL	438	INR	4244
NRO	400	NSC	4104 L	OCT	466	OTH	4846	PCL	441	CPO	4304
NRO	411	NSC	4230	OCT	480	OTH	4935	PCL	442	CPO	4306
NRO	412	NSC	4233	OCT	600	OTH	6770	PCL	443	CPO	4633
NRO	413	NSC	4246	OCT	601	OTH	6780	PCL	444	CPO	4614
NRO	414	NSC	4247	OCT	603	OTH	6418	PCL	445	CPO	4103
NRO	415	NSC	4248	OCT	604	OTH	6419	PCL	447	CPO	4046
NRO	431	NSC	4224	OCT	613	OTH	6539	PCL	450	POS	4936
NRO	432	NSC	4225	OCT	614	OTH	6549	PCL	455	POS	4932

PCL	456	POS	4936
PCL	457	POS	4936
PCL	458	POS	4936
PCL	466	POT	4064
PCL	489	POS	4925
PCL	491	SSI	4601
PCL	492	SSI	4602
PCL	493	SSI	4603
PCL	496	POS	4905
PCL	505	CPO	5636
PCL	506	CPO	5065
PCL	508	CPO	5105
PCL	511	CPO	5145
PCL	514	PAD	5035
PCL	516	POS	5685
PCL	517	POS	5425
PCL	524	INR	5207
PCL	527	INR	5505
PCL	530	POS	5933
PCL	540	INR	5245
PCL	541	CPO	5305
PCL	542	CPO	5306
PCL	547	INR	5334
PCL	550	POS	5247
PCL	551	PUP	5405
PCL	555	PUP	5105
PCL	557	POS	5692
PCL	560	PAD	5807
PCL	596	POS	5905
PCL	601	POS	6706
PCL	604	PAD	6053
PCL	605	PAD	6026
PCL	606	PAD	6946
PCL	607	POS	6927
PCL	609	POT	6611
PCL	613	POS	6736
PCL	615	POS	6757
PCL	616	POT	6017
PCL	617	POT	6027
PCL	618	POS	6747
PCL	619	POT	6207
PCL	620	POT	6087
PCL	621	POS	6727
PCL	622	PAD	6108
PCL	623	PAD	6109
PCL	624	PAD	6836
PCL	627	INR	6607
PCL	628	INR	6087
PCL	629	POS	6717
PCL	630	POS	6934
PCL	639	POS	6617
PCL	643	INR	6417
PCL	650	PAD	6327
PCL	652	POS	6157
PCL	653	POS	6045
PCL	654	POS	6127
PCL	655	POS	6447
PCL	660	CPO	6007
PCL	662	CPO	6107
PCL	664	CPO	6517
PCL	666	CPO	6637
PCL	668	CPO	6207
PCL	670	CPO	6307
PCL	672	CPO	6308
PCL	674	CPO	6357
PCL	696	POS	6905
PCL	697	POS	6910
PCL	698	POS	6940
PCL	699	POS	6971
PCL	799	POS	7980
PCY	421	PHA	4413
PCY	445	PHA	4411
PCY	447	PHA	4412 L
PCY	451	PHA	4765
PCY	455	PHA	4435
PCY	456	PHA	4436
PCY	457	PHA	4437
PCY	461	PHA	4350
PCY	464	PHA	4438
PCY	465	PHA	4439
PCY	496	PHA	4905 L
PCY	607	PHA	6934
PCY	611	PHA	6470
PCY	612	PHA	6471
PCY	613	PHA	6472 L
PCY	614	PHA	6473 L
PCY	615	PHA	6474
PCY	617	PHA	6365 C
PCY	618	PHA	6367 L
PCY	619	PHA	6375 C
PCY	621	PHA	6354
PCY	622	PHA	6355
PCY	623	PHA	6357 L
PCY	624	PHA	6358 L
PCY	625	PHA	6356
PCY	631	PHA	6416
PCY	632	PHA	6417
PCY	633	PHA	6418
PCY	642	PHA	6445
PCY	696	PHA	6905 C
PCY	697	PHA	6910 L
PCY	698	PHA	6940
PCY	699	PHA	6971 L
PCY	799	PHA	7980 L
PE	133	POR	1120
PE	134	POR	1121
PE	135	POR	1122
PE	250	PRT	2490
PE	301	POR	3130
PE	304	POR	3240
PE	305	POR	3241
PE	327	POW	3100
PE	328	POW	3130
PE	329	POW	3131
PE	404	POR	4770
PE	451	POW	4700
PE	452	POW	4710
PE	496	POW	4905
PE	600	POW	6930
PE	651	POW	6275
PE	652	POW	6276
PE	653	POW	6385
PE	654	POW	6386
PE	660	POW	6400
PHR	100	PEO	1011 C
PHR	102	PEO	1521
PHR	111	PEO	1511 C
PHR	113	PEP	1301 C
PHR	126	PEQ	1121 C
PHR	161	HES	1006
PHR	205	PEP	2421 C
PHR	209	PEO	2561
PHR	211	PEP	2401
PHR	217	PEP	2201C
PHR	220	PEO	2031 C
PHR	221	PEO	2032
PHR	224	PEO	2121 C
PHR	225	PEO	2341 C
PHR	226	PEQ	2141 L
PHR	231	DAE	2360
PHR	232	DAE	2320
PHR	244	LEI	2000
PHR	245	LEI	2021
PHR	261	HES	2000
PHR	262	HES	2001
PHR	266	HES	2400
PHR	300	PET	3590
PHR	301	PEO	3644 C
PHR	302	PEO	3624
PHR	303	PEO	3214
PHR	304	PEO	3219 C
PHR	305	PET	3940
PHR	306	PET	3944
PHR	307	PEP	3424
PHR	308	PEO	3324
PHR	310	HES	3144
PHR	311	PEO	3514
PHR	312	PEO	3621 C
PHR	314	PEO	3323
PHR	315	PEO	3623
PHR	316	PEO	3213
PHR	323	PEP	3304
PHR	324	PEO	3124
PHR	325	PEO	3344
PHR	326	PEQ	3124 C
PHR	327	PEP	3204 C
PHR	332	DAA	3700
PHR	336	HES	3404
PHR	340	LEI	3260
PHR	342	LEI	3330 C
PHR	344	LEI	3320 C
PHR	345	LEI	3540
PHR	346	LEI	3921
PHR	347	LEI	3400
PHR	351	LEI	3507 C
PHR	352	LEI	3508 C
PHR	359	HES	3431
PHR	361	HES	3301
PHR	365	PET	3320 C
PHR	366	PET	3350 C
PHR	367	PET	3340 C
PHR	368	PET	3360
PHR	370	PET	3230
PHR	371	PET	3000
PHR	373	PET	3461 C
PHR	375	PET	3640 C
PHR	376	PET	3430
PHR	377	PEP	3203 C
PHR	378	PEO	3041 C
PHR	379	DAE	3370
PHR	380	HES	3945
PHR	400	PET	4943
PHR	420	PET	4416
PHR	440	HES	4302
PHR	444	LEI	4760 C
PHR	445	LEI	4700 C
PHR	446	LEI	4500
PHR	447	LEI	4770
PHR	448	LEI	4711
PHR	449	LEI	4940
PHR	451	HES	4450
PHR	452	HES	4451
PHR	462	HES	4540
PHR	463	HES	4561
PHR	465	HES	4510
PHR	468	HES	4622 C
PHR	471	PET	4410
PHR	473	PET	4442 C
PHR	474	PET	4941 C
PHR	484	PET	4510
PHR	491	HES	4946
PHR	496	HES	4905
PHR	496	PET	4905 C
PHR	496	LEI	4905
PHR	497	PET	4948
PHR	545	HES	5935
PHR	545	HLP	5936
PHR	601	PET	6015
PHR	603	PET	6235 C
PHR	605	HLP	6345
PHR	607	PET	6932
PHR	610	PET	6515 C
PHR	612	PET	6365 C
PHR	613	PET	6368 L
PHR	616	PET	6425
PHR	618	PET	6445
PHR	620	PET	6416
PHR	633	PET	6145
PHR	645	PET	6925
PHR	660	HES	6266
PHR	661	HES	6125
PHR	662	HES	6328
PHR	663	HES	6165
PHR	664	HES	6904
PHR	665	PET	6346 C
PHR	696	HES	6905
PHR	696	PET	6905
PHR	697	PET	6910 L
PHR	697	HES	6910
PHR	698	PET	6940 L
PHR	698	HES	6940
PHR	699	HES	6971
PHR	699	PET	6971 L
PHT	301	PHT	3001
PHT	311	PHT	3213 C
PHT	312	PHT	3214 C
PHT	332	PHT	3100 C
PHT	351	PHT	3215 C
PHT	361	PHT	3500
PHT	391	PHT	3803
PHT	392	PHT	3812
PHT	393	PHT	3813
PHT	411	PHT	4234 C
PHT	412	PHT	4232 C
PHT	433	PHT	4111 L
PHT	435	PHT	4331 C
PHT	444	PHT	4245
PHT	461	PHT	4930
PHT	491	PHT	4822
PHT	492	PHT	4823
PHT	499	PHT	4824
PHY	300	PHA	3050
PHY	301	PHA	3110 C
PHY	303	PHA	3111 C
PHY	307	PHA	3112 C

TABLE 2

PHY	315	PHA	3630 C
PHY	361	PHA	3500 C
PHY	363	PHA	3501 C
PHY	401	PHA	4600
PHY	403	PHA	4120
PHY	407	PHA	4140 C
PHY	413	PHA	4720
PHY	415	PHA	4631 C
PHY	423	PHA	4821
PHY	427	PHA	4740
PHY	429	PHA	4735 C
PHY	453	PHA	4232
PHY	463	PHA	4750
PHY	471	PHA	4930
PHY	473	PHA	4202
PHY	474	PHA	4211
PHY	480	PHA	4150
PHY	482	PHA	4506
PHY	485	PHA	4760
PHY	487	PHA	4660
PHY	490	PHA	4103 C
PHY	495	PHA	4632 C
PHY	496	PHA	4905 C
PHY	497	PHA	4602
PHY	498	PHA	4106 C
PHY	499	PHA	4769
PHY	552	PHA	5508
PHY	560	PHA	5601
PHY	566	PHA	5762 C
PHY	567	PHA	5680
PHY	568	PHA	5681
PHY	569	PHA	5682
PHY	570	PHA	5685
PHY	571	PHA	5683
PHY	572	PHA	5684
PHY	601	PHA	6225
PHY	602	PHA	6935
PHY	604	PHA	6115
PHY	605	PHA	6116
PHY	606	PHA	6125
PHY	607	PHA	6936
PHY	611	PHA	6155
PHY	621	PHA	6790
PHY	627	PHA	5605
PHY	631	PHA	6235
PHY	633	PHA	6236
PHY	635	PHA	6237
PHY	637	PHA	6937
PHY	643	PHA	6146 C
PHY	645	PHA	6147 C
PHY	647	PHA	6148 C
PHY	653	PHA	6107 C
PHY	655	PHA	6606
PHY	656	PHA	6607
PHY	657	PHA	6608
PHY	696	PHA	6905 L
PHY	697	PHA	6910
PHY	698	PH	6940
PHY	699	Pha	6971
PHY	799	PHA	7980
PL	101	PEM	1100
PL	110	PEM	1012
PL	111	PEL	1621
PL	112	PEM	1102
PL	113	DAA	1100
PL	115	PEL	1646
PL	117	PEM	1201
PL	118	PEL	1571
PL	119	PEL	1511
PL	120	PEL	1541
PL	121	PEM	1121 L
PL	122	PEM	1301
PL	123	PEM	1131
PL	124	PEM	1421 L
PL	125	PEL	1441
PL	126	PEM	1431 L
PL	127	PEM	1441 L
PL	128	PEN	1171 L
PL	129	DAA	1500
PL	130	PEM	1146
PL	131	PEM	1461 L
PL	132	PEL	1521 L
PL	133	PEM	1351 L
PL	151	PEL	1141
PL	152	PEL	1346
PL	153	PEL	1111
PL	155	DAA	1340
PL	156	DAA	1300
PL	157	DAA	1310
PL	158	PEL	1121
PL	159	PEL	1421 L
PL	160	PEL	1211
PL	161	PEN	1121
PL	162	PEN	1251 L
PL	163	PEN	1136 C
PL	164	PEL	1166 L
PL	165	PEL	1341
PL	166	PEL	1321
PL	167	PEN	1151
PL	168	PEL	1041 L
PL	217	PEM	2202
PL	219	PEL	2512 L
PL	231	PEM	2462 L
PL	232	PEM	2405 L
PL	251	PEL	2142
PL	252	PEL	2347
PL	253	PEL	2112
PL	254	PEN	2231 L
PL	258	PEL	2122
PL	259	PEL	2422 L
PL	261	PEN	2122
PL	262	PEN	2141
PL	263	PEN	2113
PL	264	PEQ	2115
PL	265	PEL	2342
PL	270	PEQ	2126 C
PL	300	PET	3254
PL	303	PET	3251
PL	305	PEQ	3109
PLS	201	PLS	2031
PLS	211	PLS	2201
PLS	301	PLS	3221
PLS	302	PLS	3401
PLS	311	PLS	3221 L
PLS	442	PLS	4601
PLS	452	PLS	4701
PLY	454	PHA	4904
PLY	465	PHA	4516
PLY	491	PHA	4517
PLY	492	PHA	4518
PM	313	PMA	3010
PM	321	PMA	3931
PM	340	PMA	3941
PM	435	PMA	4401
PM	436	PMA	4402 L
POL	133	POL	1120
POL	134	POL	1121
POL	135	POL	1122
POL	136	POL	1130
POL	202	POL	2210
POL	427	PLW	4102
POL	496	PLW	4905
PPY	220	PHI	2100
PPY	201	PHI	2010
PPY	209	PHI	2930
PPY	231	PHI	2630
PPY	232	PHI	2403
PPY	304	PHM	3224
PPY	309	PHI	3930
PPY	311	PHH	3100
PPY	312	PHH	3200
PPY	313	PHH	3400
PPY	314	PHH	3440
PPY	318	PHP	3780
PPY	319	PHH	3620
PPY	320	PHH	3621
PPY	327	PHH	3640
PPY	328	PHH	3641
PPY	329	PHP	3786
PPY	330	PHI	3130
PPY	341	PHI	3300
PPY	343	PHI	3320
PPY	350	PHI	3650
PPY	357	PHI	3400
PPY	358	PHI	3420
PPY	359	PHI	3451
PPY	360	PHM	3500
PPY	361	PHM	3202
PPY	363	PHP	3765
PPY	365	PHM	3201
PPY	366	PHM	3400
PPY	370	PHI	3800
PPY	380	PHI	3700
PPY	382	PHI	3760
PPY	403	PHI	4633
PPY	409	PHI	4930
PPY	415	PHH	4130
PPY	416	PHP	4000
PPY	417	PHP	4010
PPY	419	PHH	4205
PPY	424	PHH	4401
PPY	425	PHP	4410
PPY	426	PHH	4500
PPY	427	PHH	4703
PPY	428	PHI	4341
PPY	429	PHP	4782
PPY	430	PHI	4131
PPY	441	PHI	4360
PPY	442	PHI	4540
PPY	446	PHP	4784
PPY	450	PHI	4680
PPY	456	PHI	4227
PPY	457	PHI	4404
PPY	460	PHM	4501
PPY	465	PHM	4700
PPY	466	PHM	4440
PPY	470	PHI	4801
PPY	480	PHI	4764
PPY	495	PHI	4912
PPY	496	PHI	4905
PPY	509	PHI	5934
PPY	515	PHH	5135
PPY	516	PHP	5005
PPY	517	PHP	5015
PPY	519	PHH	5206
PPY	524	PHH	5406
PPY	525	PHP	5415
PPY	526	PHH	5505
PPY	527	PHP	5781
PPY	528	PHH	5645
PPY	529	PHH	5646
PPY	530	PHI	5136
PPY	541	PHI	5365
PPY	542	PHI	5505
PPY	546	PHP	5785
PPY	550	PHI	5685
PPY	556	PHI	5225
PPY	557	PHI	5405
PPY	560	PHM	5505
PPY	565	PHM	5520
PPY	570	PHI	5807
PPY	580	PHI	5705
PPY	596	PHI	5905
PPY	609	PHI	6934
PPY	616	PHH	6106
PPY	617	PHH	6069
PPY	624	PHH	6405
PPY	625	PHP	6419
PPY	626	PHH	6509
PPY	628	PHP	6783
PPY	629	PHH	6649
PPY	630	PHI	6105
PPY	643	PHI	6325
PPY	646	PHP	6785
PPY	650	PHI	6686
PPY	659	PHI	6456
PPY	665	PHI	6426
PPY	670	PHI	6806
PPY	696	PHI	6905
PPY	697	PHI	6910
PPY	698	PHI	6940
PPY	699	PHI	6971
PPY	799	PHI	7980
PR	340	PUR	3101
PR	402	PUR	4402
PR	414	PUR	4000
PR	415	PUR	4001
PR	425	PUR	4103
PR	431	PUR	4931
PR	461	PUR	4933
PR	490	PUR	4932
PR	496	PUR	4905
PR	499	PUR	4949
PS	120	PHY	1001 C
PS	200	PHY	2032
PS	201	PHY	2002 C
PS	202	PHY	2003 C
PS	211	PHY	2050
PS	212	PHY	2051
PS	213	PHY	2052
PS	215	PHY	2040
PS	216	PHY	2041
PS	217	PHY	2042
PS	220	PHY	2032 L

PS	221	PHY	2050 L
PS	222	PHY	2051 L
PS	223	PHY	205S2 L
PS	225	PHY	2040 L
PS	226	PHY	2041 L
PS	227	PHY	2042 L
PS	235	PHS	2102
PS	236	PHS	2103
PS	237	PHS	2104
PS	283	PHS	2802
PS	28S	PHY	2063 C
PS	286	PHY	2064 C
PS	287	PHY	206S C
PS	300	PHY	3223
PS	310	PHY	3323
PS	330	PHY	3423
PS	333	PHY	3018
PS	340	PHY	3123
PS	391	PHY	3036
PS	396	PHY	3905
PS	400	PHY	4224
PS	410	PHY	4324
PS	41S	PHY	4712 L
PS	420	PHY	4S23
PS	430	PHY	4424
PS	435	PHY	4454 L
PS	440	PHY	4124
PS	44S	PHY	4822 L
PS	460	PHS	4303
PS	46S	PHS	4330 L
PS	48S	PHS	480S
PS	491	PHY	4910 L
PS	492	PHY	4930
PS	496	PHY	490S
PS	500	PHY	S225
PS	S10	PHY	S325
PS	S1S	PHY	S722 C
PS	S16	PHY	5723 C
PS	520	PHY	5524
PS	S30	PHY	5445
PS	541	PHY	5624
PS	542	PHS	S204
PS	S50	PHS	5404
PS	S60	PHS	5304
PS	S66	PHS	5331 L
PS	570	PHS	5354
PS	S96	PHY	590S
PS	601	PHY	6246
PS	603	PHS	6606
PS	604	PHS	6616
PS	611	PHY	6346
PS	612	PHY	6347
PS	61S	PHY	6078
PS	616	PHY	6077
PS	621	PHY	6536
PS	622	PHY	6537
PS	629	PHS	6247
PS	633	AST	616S
PS	634	AST	6166
PS	636	AST	6169
PS	637	AST	6167
PS	638	AST	6168
PS	642	PHS	6209
PS	643	PHY	6645
PS	644	PHY	6646
PS	645	PHY	6647
PS	647	PHS	6225
PS	648	PHS	6226
PS	649	PHS	6227
PS	660	PHS	6391
PS	661	PHS	6326
PS	662	PHS	6336
PS	663	PHS	6337
PS	671	PHY	6648
PS	672	PHY	6668
PS	680	PHY	693S
PS	681	PHS	615S
PS	682	PHY	65S6
PS	68S	PHS	6493
PS	69S	PHY	6920
PS	696	PHY	6905
PS	697	PHY	6910
PS	698	PHY	6940
PS	699	PHY	6971
PS	703	PHY	7247
PS	713	PHY	7348
PS	722	PHY	7538
PS	723	PHY	7539
PS	741	PHS	7236
PS	742	PHS	7237
PS	753	PHS	7426
PS	754	PHS	7427
PS	755	PHS	7428
PS	7S6	PHS	7228
PS	7S7	PHS	7229
PS	764	PHS	7327
PS	771	PHS	73S7
PS	772	PHS	73S8
PS	781	PHY	7097
PS	782	PHY	7098
PS	790	PHY	7939
PS	799	PHY	7980
PSY	201	PSY	2013
PSY	303	DEP	3003
PSY	313	SOP	3004
PSY	320	EAB	3002
PSY	334	EXP	3604 C
PSY	335	EXP	3204
PSY	336	EXP	3933
PSY	342	PCO	3714
PSY	34S	PPE	3004
PSY	347	SOP	3742
PSY	371	PSB	3004
PSY	377	CBH	3003
PSY	379	EXP	3714 L
PSY	399	PSY	3912
PSY	402	DEP	411S
PSY	403	DEP	430S
PSY	404	DEP	4204
PSY	40S	DEP	4704
PSY	409	DEP	4404
PSY	410	SOP	4214 C
PSY	411	SOP	4704
PSY	412	SOP	4S13
PSY	413	SOP	4S24
PSY	414	SOP	4404
PSY	41S	SOP	4334
PSY	420	EAB	4022 C
PSY	421	EAB	4704
PSY	422	EAB	4184
PSY	423	EAB	4724 C
PSY	424	EAB	4033 L
PSY	425	EAB	4764
PSY	428	EAB	4933 C
PSY	429	EAB	4234 C
PSY	430	EXP	4124 C
PSY	431	EXP	420S L
PSY	433	EXP	4502 C
PSY	434	EXP	4504 C
PSY	43S	EXP	4104
PSY	436	EXP	4214
PSY	437	EXP	4254
PSY	438	EXP	4635
PSY	439	EXP	4934 C
PSY	440	PPE	460S
PSY	441	PPE	4445
PSY	442	PPE	4104
PSY	443	PPE	40S5
PSY	444	PPE	4324 C
PSY	44S	EXP	4204 C
PSY	446	PPE	4606
PSY	447	PSY	431S
PSY	449	CLP	4144
PSY	469	EAB	4S09
PSY	470	EAB	4049
PSY	471	PSB	4003
PSY	472	PSB	4104 L
PSY	477	CBH	4023 C
PSY	479	PSB	4934
PSY	491	PSY	4039
PSY	492	PSY	4049
PSY	496	PSY	4905
PSY	498	PSY	4970
PSY	500	DEP	5049
PSY	520	EAB	5055
PSY	522	EAB	S93S
PSY	52S	EAB	5S05
PSY	S70	PSB	544S
PSY	S72	PSB	5115 C
PSY	S73	PSB	5935
PSY	574	PSB	5465
PSY	575	PSB	5065
PSY	576	EAB	5436
PSY	577	CBH	5085
PSY	578	EXP	S116
PSY	579	PSB	S325
PSY	580	PSB	5505
PSY	S94	PSY	5605
PSY	604	DEP	6936
PSY	605	DEP	6409
PSY	607	DEP	6059
PSY	608	DEP	6796
PSY	609	DEP	6799
PSY	611	SOP	6069
PSY	612	SOP	6079
PSY	613	SOP	6116
PSY	616	SOP	6709
PSY	617	SOP	6218 C
PSY	618	SOP	6219 C
PSY	620	EAB	6056
PSY	621	EAB	6707
PSY	622	EAB	6937 C
PSY	623	EAB	6719
PSY	624	EAB	6708
PSY	625	EAB	6118
PSY	626	EAB	67S8
PSY	630	EXP	6126 C
PSY	631	PSB	6627
PSY	632	EXP	6717 C
PSY	633	PSY	6508
PSY	634	EXP	6527 C
PSY	635	EXP	6209
PSY	636	EXP	6519
PSY	637	EXP	6939
PSY	638	EXP	6609
PSY	639	PSY	6939
PSY	640	PPE	6059
PSY	641	PPE	6327
PSY	644	PPE	6307
PSY	645	PPE	6308
PSY	646	PSY	6268
PSY	647	PPE	6667
PSY	648	PSY	6328
PSY	649	PPE	6209
PSY	6S5	CLP	6169
PSY	661	PCO	6939
PSY	663	PCO	6316 C
PSY	664	PCO	6317 C
PSY	665	PCO	6216
PSY	667	PCO	6717
PSY	670	PSB	6607
PSY	671	PSB	6609
PSY	672	PSB	6086
PSY	673	PSB	6087
PSY	674	PSB	6067
PSY	675	EXP	6128
PSY	676	EXP	6109
PSY	677	CBH	6056
PSY	678	EXP	6108
PSY	679	EXP	6119
PSY	681	SOP	6099
PSY	682	PSB	6076
PSY	683	EAB	6098
PSY	684	PPE	6098
PSY	685	DEP	6099
PSY	686	EXP	6098
PSY	694	PSY	6698
PSY	696	PSY	6905
PSY	697	PSY	6910
PSY	698	PSY	6940
PSY	699	PSY	6971
PSY	700	DEP	7069
PSY	704	DEP	7118
PSY	706	DEP	7608
PSY	710	SOP	7319
PSY	711	SOP	7319
PSY	718	SOP	7318
PSY	719	SOP	7339
PSY	720	EAB	7089
PSY	721	EAB	7729 C
PSY	722	EAB	7738
PSY	723	EAB	7739
PSY	728	EAB	7888
PSY	729	EAB	7799
PSY	730	EXP	7127 C
PSY	733	EXP	7129
PSY	737	EXP	7689
PSY	740	PPE	7288
PSY	745	PPE	7309
PSY	749	PPE	7947
PSY	758	PCO	7948
PSY	768	PCO	7949
PSY	770	PSB	7719
PSY	772	PSB	7118

TABLE 2

PSY	773	PSB	7249	RN	326	REL	3322	SCH	316	SPC	3710
PSY	744	PSB	7069	RN	330	REL	3600	SCH	317	SPC	3594
PSY	775	PSB	7248	RN	340	REL	3202	SCH	362	SPC	3420
PSY	776	PSB	7817	RN	341	REL	3210	SCH	364	SPC	3513
PSY	777	CBH	7088	RN	343	REL	3244	SCH	367	SPC	3541
PSY	779	PSB	7079	RN	344	REL	3245	SCH	378	SPC	3305
PSY	799	PSY	7980	RN	345	REL	3341	SCH	384	LIN	3200
PT	301	PLP	3002	RN	346	REL	3331	SCH	385	SPA	3011
PT	311	PLP	3003 L	RN	347	REL	3630	SCH	386	SPA	3101
PT	313	PLP	3004 L	RN	351	REL	3611	SCH	390	SPA	3102
PT	402	PLP	4102 L	RN	352	REL	3612	SCH	391	SPA	3105
PT	450	PLP	4931	RN	353	REL	3500	SCH	394	LIN	3710
PT	496	PLP	4905	RN	357	REL	3121	SCH	405	SPC	4514
PT	501	PLP	5032 L	RN	358	REL	3122	SCH	407	SPC	4540
PT	541	PLP	5053 L	RN	360	REL	3494	SCH	410	SPC	4620
PT	600	PLP	6921	RN	361	REL	3495	SCH	418	COM	4110
PT	611	PLP	6223	RN	362	REL	3440	SCH	419	SED	4335
PT	612	PLP	6224	RN	364	REL	3420	SCH	440	SPA	4051
PT	621	PLP	6241	RN	365	REL	3116	SCH	441	SPA	4052
PT	623	PLP	6262	RN	370	ANT	3241	SCH	450	SPA	4200
PT	625	PLP	6303	RN	371	REL	3172	SCH	451	SPA	4210
PT	627	PLP	6402	RN	373	REL	3140	SCH	452	SPA	4400
PT	629	PLP	6502	RN	374	REL	3130	SCH	453	SPA	4220
PT	650	PLP	6931	RN	375	REL	3492	SCH	460	SPA	4053
PT	691	PLP	6281	RN	378	REL	3158	SCH	461	SPA	4054
PT	692	PLP	6291	RN	380	PHI	3700	SCH	462	SPA	4302
PT	696	PLP	6905	RN	381	REL	3342	SCH	467	SPC	4543
PT	697	PLP	6910	RN	382	REL	3620	SCH	468	SPC	4609
PT	698	PLP	6940	RN	383	REL	3695	SCH	474	SPA	4362
PT	699	PLP	6971	RN	401	REL	4304	SCH	485	LIN	4233
PT	799	PLP	7980	RN	403	REL	4390	SCH	486	LIN	4231
PY	312	PSE	3211 C	RN	405	REL	4460	SCH	487	LIN	4260
PY	400	PSE	4949	RN	407	REL	4520	SCH	488	LIN	4290
PY	414	PSE	4411 C	RN	421	REL	4347	SCH	491	SPA	4121
PY	415	PSE	4223	RN	422	REL	4333	SCH	492	SPA	4118
PY	422	PSE	4311	RN	425	SOC	4211	SCH	494	LIN	4712
PY	453	PSE	4611	RN	426	REL	4346	SCH	498	SPC	4931
PY	607	PSE	6931	RN	441	REL	4294	SCH	503	SED	5340
PY	612	PSE	6522	RN	443	REL	4291	SCH	510	SPC	5610
PY	614	PSE	6415	RN	450	REL	4462	SCH	517	SED	5372
PY	631	PSE	6227	RN	454	REL	4134	SCH	540	SPA	5202
PY	653	PSE	6614	RN	456	REL	4143	SCH	541	SPA	5211
PY	660	PSE	6938	RN	457	REL	4112	SCH	542	SPA	5403
PY	696	PSE	6905	RN	458	REL	4120	SCH	543	SPA	5223
PY	697	PSE	6910	RN	471	REL	4177	SCH	549	SPA	5553
PY	698	PSE	6940	RN	473	REL	4144	SCH	560	SPA	5304
PY	699	PSE	6971	RN	478	REL	4156	SCH	562	SPA	5111
RC	500	EGC	5065	RN	482	REL	4690	SCH	572	SPA	5423
RC	501	EGC	5166	RN	487	REL	4933	SCH	574	SPA	5322
RC	602	EGC	6374	RN	496	REL	4905	SCH	580	SPA	5135
RC	603	EGC	6376	RSN	133	RUS	1120	SCH	581	SPC	5149
RC	604	EGC	6493	RSN	134	RUS	1121	SCH	582	SPC	5148
RC	605	EGC	6934	RSN	135	RUS	1122	SCH	585	LIN	5231
RC	607	EGC	6675	RSN	202	RUS	2200	SCH	586	LIN	5222
RC	644	EGC	6767	RSN	250	RUT	2110	SCH	591	SPA	5122
RC	660	EGC	6850	RSN	304	RUS	3240	SCH	592	SPA	5119
RC	661	EGC	6851	RSN	406	RUS	4300	SCH	594	LIN	5715
RC	680	EGC	6885	RSN	412	RUS	4840	SCH	595	SPC	5335
RC	696	EGC	6905	RSN	413	RUS	4700	SCH	596	SPC	5905
RC	697	EGC	6910	RSN	427	RUW	4100	SCH	597	SPA	5242
RC	698	EGC	6940	RSN	428	RUW	4101	SCH	600	COM	6300
RE	340	REE	3720	RSN	496	RUS	4905	SCH	605	SPC	6682
RE	350	REE	3043	RSN	506	RUS	5301	SCH	606	SPC	6493
REE	440	REE	4430	RSN	512	RUS	5845	SCH	608	SPC	6619
RE	450	REE	4100	RSN	513	RUS	5701	SCH	610	SPC	6253
RE	460	REE	4310	RSN	527	RUW	5120	SCH	611	COM	6316
RE	470	REE	4704	RSN	528	RUW	5121	SCH	612	COM	6320
RE	480	REE	4204	RSN	596	RUW	5905	SCH	613	SPC	6218
RE	496	REE	4905	SCA	320	EIA	3291 C	SCH	614	COM	6350
RE	498	REE	4934	SCA	330	ART	3100 C	SCH	615	SPC	6545
RE	640	REE	6609	SCA	340	EIA	3280 C	SCH	616	COM	6318
RE	650	REE	6305	SCA	401	ARE	4242	SCH	618	COM	6121
RE	660	REE	6395	SCA	402	ARE	4243	SCH	619	SED	6930
RE	670	REE	6756	SCA	403	ARE	4244	SCH	640	SPA	6204
RE	680	REE	6286	SCH	201	SPC	2300	SCH	641	SPA	6215
RE	690	REE	6936	SCH	206	SPC	2330	SCH	642	SPA	6407
RE	696	REE	6905	SCH	208	LIN	2711	SCH	643	SPA	6226
RE	697	REE	6910	SCH	212	LIN	2701	SCH	644	SPA	6214
RE	698	REE	6940	SCH	224	SPC	2260	SCH	645	SPA	6207
RE	699	REE	6971	SCH	240	SPC	2050	SCH	646	SPA	6227
RE	790	REE	7920	SCH	280	SPA	2013	SCH	647	SPA	6445
RE	799	REE	7980	SCH	301	SPC	3440	SCH	648	SPA	6216
RLL	600	FOW	6930	SCH	304	SPA	3001	SCH	649	SPA	6521
RLL	619	FOL	6732	SCH	309	SPC	3210	SCH	650	SPA	6206
RN	251	REL	2010	SCH	310	SPC	3250	SCH	651	SPA	6411
RN	321	REL	3340	SCH	311	COM	3310	SCH	653	SPA	6600
RN	322	REL	3330	SCH	312	SPC	3601	SCH	654	SPA	6435
RN	323	REL	3321	SCH	314	SPC	3301	SCH	655	SPA	6231

SCH	656	SPA	6410
SCH	657	SPA	6245
SCH	659	SPA	6524
SCH	660	SPA	6313
SCH	661	SPA	6345
SCH	662	SPA	6305
SCH	663	SPA	6314
SCH	664	SPA	6318
SCH	669	SPA	6531
SCH	670	SPA	6327
SCH	671	SPA	6364
SCH	679	SPA	6533
SCH	680	SPA	6155
SCH	683	SPA	6933
SCH	684	LIN	6716
SCH	685	SPA	6140
SCH	686	SPA	6141
SCH	687	SPA	6145
SCH	688	SPA	6146
SCH	689	LIN	6705 L
SCH	691	SPA	6120
SCH	692	SPA	6125
SCH	693	SPA	6107
SCH	694	LIN	6707
SCH	695	LIN	6705
SCH	696	5PA	6905
SCH	697	SPC	6910
SCH	698	SPA	6940
SCH	699	SPA	6971
SCH	701	5PC	7937
SCH	715	SPC	7548
SCH	749	SPA	7523
SCH	769	SPA	7536
SCH	772	SPA	7354
SCH	780	5PC	7190
SCH	785	LIN	7295
SCH	786	SPA	7127
SCH	790	SPA	7128
SCH	795	LIN	7709
SCH	796	LIN	7195
SCH	799	SPA	7980
SH	103	SPN	1110
SH	104	SPN	1111
SH	105	SPN	1112
SH	133	SPN	1100
SH	134	SPN	1121
SH	135	SPN	1122
SH	202	SPN	2200
SH	204	SPN	2240
SH	250	5PT	2601
SH	251	5PT	2231
SH	305	SPN	3300
SH	306	SPN	3301
SH	327	SPW	3100
SH	328	SPW	3101
SH	329	SPW	3102
SH	330	SPN	3500
SH	404	SPN	4780
SH	405	SPN	4420
SH	406	SPN	4850
SH	412	SPN	4840
SH	413	SPW	4335
SH	421	SPW	4310
SH	422	SPW	4604
SH	423	SPW	4215
SH	431	SPW	4315
SH	432	SPW	4265
SH	441	SPW	4725
SH	450	5PW	4480
SH	475	SPW	4130
SH	476	SPW	4131
SH	477	SPW	4132
SH	479	SPW	4280
SH	496	SPN	4905
SH	505	SPN	5310
SH	506	SPN	5851
SH	575	SPW	5135
SH	576	SPW	5136
SH	577	SPW	5137
SH	600	SPW	6902
SH	602	SPN	6050
SH	603	5PN	6051
SH	604	SPN	6781
SH	606	SPN	6730
SH	610	SPW	6806
SH	612	SPN	6843
SH	618	5PW	6400
SH	619	SPW	6401
SH	621	SPW	6313
SH	623	SPW	6216
SH	625	SPW	6337
SH	631	SPW	6319
SH	632	SPW	6269
SH	635	SPW	6705
SH	637	SPW	6602
SH	640	SPW	6245
SH	641	SPW	6729
SH	650	SPW	6481
SH	655	SPW	6765
SH	660	SPW	6575
SH	665	SPW	6366
SH	667	SPW	6285
SH	668	SPW	6286
SH	679	SPW	6237
SH	685	SPW	0275
SH	686	SPW	6325
SH	696	SPW	6905
SH	697	SPW	6910
SH	698	SPN	6940
SH	699	SPW	6971
SH	799	SPW	7980
SI	133	SWA	1120
SI	134	SWA	1121
SI	135	SWA	1122
SI	304	SWA	3240
SI	338	SWT	3110
SI	406	SWA	4850
SLS	312	SOS	3003
SLS	325	SOS	3007
SLS	330	SOS	3022 C
SLS	333	SOS	3215 C
SLS	400	SOS	4941
SLS	421	SOS	4404 C
SLS	422	SOS	4303
SLS	423	SOS	4715
SLS	424	SOS	4602
SLS	426	SOS	4115
SLS	428	SOS	4732
SLS	437	SOS	4718
SLS	496	SOS	4905
SLS	525	SOS	5132
SLS	600	SOS	6932
SLS	621	SOS	6414
SLS	622	SOS	6323
SLS	623	SOS	6717
SLS	624	SOS	6622
SLS	626	SOS	6136
SLS	627	SOS	6424
SLS	628	SOS	6444
SLS	630	SOS	6233
SLS	631	SOS	6454
SLS	632	SOS	6325 L
SLS	636	SOS	6418
SLS	637	SOS	6752
SLS	641	SOS	6464
SLS	651	SOS	6931
SLS	696	SOS	6905
SLS	697	SOS	6910
SLS	698	SOS	6940
SLS	699	SOS	6971
SLS	799	SOS	7980
SSC	211	SSI	2110
SSC	219	SSI	2116
SSC	221	SSI	2120
SSC	222	SSI	2122
SSC	223	SSI	2121
SSC	229	SSI	2126
SSC	231	SSI	2221
SSC	232	SSI	2201
SSC	239	SSI	2226
SSC	251	SSI	2935
SSC	281	ANS	2001
SSC	291	SSI	2114
SSC	292	SSI	2124
SSC	293	SSI	2224
SSC	316	SPC	3710 C
SSC	352	SSI	3127
SSC	353	SSI	3227
STA	310	STA	3013
STA	320	STA	3023
STA	321	STA	3024
STA	330	STA	3032
STA	401	STA	4404
STA	407	STA	4202
STA	408	STA	4203
STA	409	STA	4204
STA	410	STA	4033
STA	420	STA	4222
STA	440	STA	4321
STA	441	STA	4322
STA	450	STA	4173
STA	490	5TA	4930
STA	496	STA	4905
STA	523	5TA	5106
STA	524	STA	5107
5TA	602	STA	6166
STA	603	STA	6167
STA	607	STA	6206
STA	608	STA	6207
STA	609	STA	6208
STA	610	STA	6326
STA	611	STA	6327
STA	612	STA	6328
5TA	619	5TA	6246
STA	621	5TA	6247
STA	622	STA	6226
STA	623	STA	6707
STA	624	STA	6227
STA	626	STA	6857
STA	628	STA	6900
STA	635	STA	6176
STA	636	STA	6177
STA	637	STA	6178
STA	640	STA	6446
STA	641	STA	6447
STA	642	STA	6448
STA	650	STA	6526
STA	652	STA	6267
STA	660	STA	6826
STA	661	STA	6827
STA	662	STA	6828
STA	670	STA	6746
5TA	671	STA	6747
STA	676	STA	6606
STA	680	STA	6876
STA	681	STA	6877
STA	690	STA	6934
STA	691	STA	6938
STA	696	STA	6905
STA	697	STA	6910
STA	698	STA	6940
STA	699	STA	6971
STA	740	STA	7346
STA	741	STA	7347
STA	742	STA	7348
STA	799	STA	7980
SY	201	SOC	2000
SY	202	SOC	2020
SY	230	MAF	2200
SY	311	SOW	3001
SY	312	SOW	3033
SY	321	SOC	3300
SY	322	SOC	3022
SY	350	SOC	3310
SY	355	SOC	3320
SY	360	SOC	3331
SY	380	SOC	3830
SY	391	SOC	3745
SY	403	SOC	4640
SY	404	SOC	4001
SY	409	MAF	4400
SY	413	SOC	4241
SY	414	SOC	4230
SY	419	SOC	4243
SY	422	SOC	4410
SY	425	SOC	4211
SY	429	SOC	4422
SY	432	MAF	4501
SY	433	MAF	4510
SY	442	SOC	4500
SY	460	SOC	4620
SY	463	SOC	4462
SY	470	DHE	4200
SY	471	DHE	4101
SY	481	SOC	4850
SY	482	SOC	4432
SY	483	SOC	4831
SY	485	SOC	4931
SY	486	SOC	4150
SY	487	SOC	4130
SY	491	SSI	4601
SY	492	SSI	4602
SY	493	SSI	4603
SY	494	SOC	4720
SY	496	SOC	4905
SY	498	SOC	4040
SY	596	SOC	5905

TABLE 2

SY	598	SOC	5933	THE	429	THE	4111	VC	451	VEC	4452
SY	603	SOC	6646	THE	430	THE	4112	VC	496	VEC	4905
SY	604	SOC	6050	THE	431	DAN	4103	VM	501	VEM	5837 L
SY	605	SOC	6647	THE	434	DAA	4103	VM	502	VEM	5845 L
SY	606	SOC	6616	THE	438	THE	4730	VM	503	VEM	5835 L
SY	607	SOC	6630	THE	439	THE	4760	VM	504	VEM	5841 L
SY	608	SOC	6827	THE	496	THE	4905	VM	505	VEM	5833 L
SY	609	MAF	6405	THE	499	THE	4949	VM	506	VEM	5861 L
SY	613	SOC	6246	THE	522	TPP	5192	VM	507	VEM	5855 L
SY	614	SOC	6235	THE	524	TPP	5294 L	VM	508	VEM	5851 L
SY	615	SOC	6236	THE	526	TPA	5084	VM	509	VEM	5821 L
SY	616	SOC	6237	THE	527	TPA	5048	VM	510	VEM	5879 L
SY	617	SOC	6238	THE	528	THE	5116	VM	511	VEM	5883 L
SY	618	SOC	6247	THE	529	THE	5117	VM	512	VEM	5891 C
SY	619	SOC	6244	THE	530	THE	5118	VM	513	VEM	5831 L
SY	622	SOC	6415	THE	599	THE	5949	VM	514	VEM	5836 L
SY	629	SOC	6426	THE	620	TPP	6934	VM	515	VEM	5842 L
SY	632	MAF	6507	THE	621	TPA	6085	VM	516	VEM	5834 L
SY	633	MAF	6515	THE	622	THE	6203	VM	517	VEM	5846 L
SY	634	MAF	6601	THE	623	THE	6204	VM	518	VEM	5884 L
SY	635	MAF	6611	THE	624	THE	6285	VM	519	VEM	5885 C
SY	642	SOC	6501	THE	625	THE	6286	VM	520	VEM	5859 L
SY	643	SOC	6502	THE	626	TPA	6219	VM	521	VEM	5822 L
SY	648	SOC	6506	THE	627	THE	6287	VM	522	VEM	5856 L
SY	651	SOC	6315	THE	628	THE	6560	VM	523	VEM	5801 L
SY	652	SOC	6312	THE	629	THE	6561	VM	524	VEM	5811 L
SY	653	SOC	6314	THE	631	THE	6230	VM	525	VEM	5815 L
SY	658	SOC	6321	THE	632	THE	6231	VM	526	VEM	5819 L
SY	660	SOC	6625	THE	633	THE	6232	VM	527	VEM	5863 L
SY	663	SOC	6466	THE	634	TPA	6023	VM	528	VEM	5877 L
SY	664	SOC	6336	THE	635	THE	6234	VM	529	VEM	5865 L
SY	665	SOC	6335	THE	636	THE	6200	VM	530	VEM	5881 L
SY	670	DHE	6205	THE	637	TPA	6275	VM	531	VEM	5887 C
SY	672	DHE	6110	THE	638	THE	6913	VM	532	VEM	5875 L
SY	673	DHE	6111	THE	639	ORI	6430	VM	533	VEM	5869 L
SY	674	DHE	6453	THE	640	TPA	6935	VM	534	VEM	5871 L
SY	680	SOC	6808	THE	641	TPP	6193	VM	535	VEM	5867 L
SY	681	SOC	6855	THE	642	TPA	6087	VM	536	VEM	5873 L
SY	682	SOC	6435	THE	644	TPP	6234	VM	537	VEM	5892 C
SY	683	SOC	6832	THE	645	TPP	6921	VM	538	VEM	5531 C
SY	684	SOC	6175	THE	659	THE	6972	VM	539	VEM	5101 C
SY	685	SOC	6115	THE	696	THE	6905	VM	540	VEM	5131
SY	686	SOC	6155	THE	697	THE	6910	VM	541	VEM	5113 C
SY	687	SOC	6135	THE	698	THE	6940	VM	542	VEM	5157 C
SY	691	SOC	6748	THE	699	THE	6971	VM	543	VEM	5201 C
SY	695	SOC	6337	UCH	291	IDS	2931	VM	544	VEM	5181 C
SY	696	SOC	6905	UCH	292	IDS	2931	VM	545	VEM	5111 C
SY	697	SOC	6910	UCH	293	IDS	2931	VM	546	VEM	5112 C
SY	698	SOC	6940	UCI	251	IDS	2188	VM	547	VEM	5213 C
SY	699	SOC	6971	UCI	252	IDS	2342	VM	552	VEM	5279 C
SY	701	SOC	7657	UCI	253	IDS	2343	VM	554	VEM	5151 C
SY	725	SOC	7285	UCI	352	IDS	2301	VM	555	VEM	5920
SY	749	SOC	7503	UCI	353	IDS	3302	VM	556	VEM	5852 L
SY	797	SOC	7935	UCI	371	IDS	3158	VM	557	VEM	5838 L
SY	798	SOC	7933	URP	402	URP	4000	VM	560	VEM	5141 C
SY	799	SOC	7980	URP	601	URP	6931	VM	561	VEM	5533 C
THE	213	DAA	2101	URP	602	URP	6101	VM	562	VEM	5161 C
THE	220	THE	2000	URP	603	URP	6102	VM	563	VEM	5441 C
THE	225	ORI	2001	URP	622	URP	6131	VM	565	VEM	5225
THE	226	ORI	2002	URP	623	URP	6132	VM	566	VEM	5171 C
THE	232	DAE	2320	URP	624	URP	6811	VM	567	VEM	5251 C
THE	240	TPP	2700	URP	625	URP	6312	VM	569	VEM	5535 C
THE	320	TPP	3110	URP	626	URP	6261	VM	570	VEM	5301 C
THE	321	TPP	3111	URP	628	URP	6061	VM	571	VEM	5302 C
THE	322	TPP	3112	URP	629	URP	6979	VM	572	VEM	5401 C
THE	323	TPA	3290 L	URP	631	URP	6301	VM	573	VEM	5501
THE	324	TPA	3200	URP	632	URP	6311	VM	575	VEM	5041
THE	325	TPA	3010	URP	633	URP	6331	VM	576	VEM	5031
THE	326	TPA	3220	URP	634	URP	6341	VM	577	VEM	5191
THE	327	TPA	3250	URP	641	URP	6700	VM	579	VEM	5371 C
THE	328	TPP	3650	URP	661	URP	6821	VM	580	VEM	5571
THE	329	TPP	3310	URP	662	URP	6231	VM	581	VEM	5021
THE	330	TPP	3311	URP	671	URP	6801	VM	582	VEM	5361 L
THE	331	TPP	3510	URP	672	URP	6802	VM	583	VEM	5311
THE	332	TPP	3511	URP	681	URP	6203	VM	584	VEM	5402 L
THE	333	DAA	2200	URP	682	URP	6421	VM	585	VEM	5193
THE	334	DAA	3700	URP	696	URP	6905	VM	586	VEM	5195
THE	335	DAN	3500	URP	697	URP	6910	VM	587	VEM	5505 C
THE	336	DAA	3102	URP	698	URP	6940	VM	588	VEM	5555
THE	337	TPA	3270	URP	699	URP	6971	VM	589	VEM	5231
THE	420	TPA	4024	VC	301	VEC	3200	VM	590	VEM	5221
THE	421	TPA	4230	VC	302	VEC	3100	VM	592	VEM	5241 L
THE	422	TPA	4231	VC	310	VEC	3224	VM	594	VEM	5421 C
THE	423	TPA	4232	VC	400	VEC	4941	VM	596	VEM	5551
THE	424	THE	4945	VC	409	VEC	4225	VM	597	VEM	5515 C
THE	426	TPA	4062	VC	410	VEC	4226	VM	598	VEM	5262
THE	427	TPA	4047	VC	415	VEC	4410	VM	599	VEM	5261
THE	428	THE	4110	VC	420	VEC	4432	VY	321	VES	3202 C

VY	401	VES	4162
VY	405	VES	4131
VY	415	VES	4611
VY	441	VES	4113
VY	562	VES	5302
VY	563	VES	5303
VY	602	VES	6503
VY	610	VES	6761
VY	622	VES	6242 C
VY	623	VES	6243 C
VY	624	VES	6322
VY	626	VES	6342
VY	632	VES	6651
VY	633	VES	6652
VY	634	VES	6602
VY	635	VES	6603
VY	642	VES	6402
VY	663	VES	6362
VY	682	VES	6765
VY	690	VES	6931
VY	696	VES	6905
VY	697	VES	6910
VY	698	VES	6940
VY	699	VES	6971
ZY	201	ZOO	2013 C
ZY	202	ZOO	2014
ZY	306	ZOO	3303 C
ZY	307	ZOO	3803 C
ZY	308	ZOO	3203 C
ZY	309	ZOO	3703 C
ZY	310	ZOO	3605 C
ZY	321	PCB	3673
ZY	325	PCB	3063
ZY	326	PCB	3653 L
ZY	371	ZOO	3513 C
ZY	405	PCB	4043 C
ZY	410	ZOO	4404 C
ZY	416	ZOO	4235 C
ZY	421	ZOO	4755 C
ZY	450	PCB	4675
ZY	454	ZOO	4473 C
ZY	474	PCB	4745 C
ZY	490	ZOO	4926
ZY	496	ZOO	4905
ZY	507	ZOO	5115 C
ZY	529	PCB	5415 C
ZY	545	PCB	5545
ZY	565	APB	5415 C
ZY	579	ZOO	5405 C
ZY	605	PCB	6357 C
ZY	607	ZOO	6116 C
ZY	609	ZOO	6816
ZY	610	ZOO	6857 C
ZY	612	PCB	6317 C
ZY	624	ZOO	6246 C
ZY	626	PCB	6447 C
ZY	627	PCB	6496 C
ZY	628	PCB	6307 C
ZY	629	PCB	6049
ZY	632	ZOO	6207 C
ZY	633	ZOO	6336 C
ZY	636	EXP	6108
ZY	637	PSB	6607
ZY	638	EXP	6109
ZY	642	PCB	6377 C
ZY	644	PCB	6796 C
ZY	650	ZOO	6465 C
ZY	651	ZOO	6456 C
ZY	652	ZOO	6466 C
ZY	653	ZOO	6486 C
ZY	654	ZOO	6476 C
ZY	664	PCB	6069
ZY	665	PCB	6577 C
ZY	666	ZOO	6126
ZY	669	PCB	6686 C
ZY	671	ZOO	6506 C
ZY	673	ZOO	6939
ZY	690	ZOO	6927
ZY	696	ZOO	6905
ZY	697	ZOO	6910
ZY	698	ZOO	6940
ZY	699	ZOO	6971
ZY	799	ZOO	7980

OFFICERS OF INSTRUCTION RESEARCH, ADMINISTRATION AND EXTENSION 1978-1979

(The first date indicates the first year of academic employment; the last date, the year of present rank; the asterisk represents interruptions in service or leave of absence; †denotes Veterans Administration Hospital staff.)

ABBITT, BENNETT, M.S. (University of Georgia)
Assistant Professor (Community and Resource Development) IFAS, IFAS, AREC, Lake Alfred (1974-1976).

ABBITT, BRUCE, D.V.M. (University of Georgia)
Assistant Professor (Extension Veterinarian), College of Veterinary Medicine, IFAS (1977-1977).

ABBOTT, ELIZABETH F., Ph.D. (University of Florida)
Assistant Professor of Physical Sciences and Director of Florida Foundation for Future Scientists (1973-1973).

ABBOTT, THOMAS BENJAMIN, Ph.D. (University of Florida)
Professor of Speech and Communicative Disorders (1963-1976).

ABBOTT, WESLEY WENDELL, M.Ed.
Instructor, P.K. Yonge Laboratory School (1958-1962).

ABDEL-KHALIK, A. RASHAD, Ph.D. (University of Illinois)
Matherly Professor of Accounting (1977-1977).

ABRAMS, ROBERT M., Ph.D., D.D.S. (Univ. of Pennsylvania)
Associate Professor, Obstetrics and Gynecology (1969-1974).

ACHEY, PHILLIP M., Ph.D. (Pennsylvania State University)
Associate Professor, Microbiology and Cell Science, IFAS (1967-1975).

ADAMS, CALVIN K., Ph.D. (Kansas State University)
Research Scientist, Center for Research on Human Prothesis (1969-1977).

ADAMS, EARNEST DWIGHT, Ph.D. (Duke University)
Professor of Physics (1962-1970).

ADAMS, ELWYN A., M.M.
Associate Professor of Music (1970-1972).

ADAMS, JOHN E., M.D. (Cornell University Medical College)
Professor and Chairperson, Department of Psychiatry (1974-1974).

ADAMS, SANDRA P., M.O.T. (University of Florida)
Assistant Professor of Occupational Therapy (1975-1977).

ADAMS, W. W., M.A.
Interim Assistant Professor of Journalism and Communications (1976-1977).

ADERHOLDT, ROBERT W., Ph.D. (Georgia Inst. of Technology)
Associate Professor of Building Construction (1972-1977).

ADLERZ, WARREN CLIFFORD, Ph.D. (Oregon State University)
Professor (Entomologist), IFAS, Agricultural Research Center, Leesburg (1958-1974).

AGEE, HERNDON, ROYCE, Ph.D. (Tufts University)
Associate Professor (Associate Entomologist), IFAS, USDA (1973-1973).

AGEE, O. FRANK, M.D. (Louisiana State University)
Professor of Radiology (1962-1970).

AGRESTI, ALAN C., Ph.D. (University of Wisconsin)
Assistant Professor of Statistics (1972-1972).

AGRESTI, BARBARA F., Ph.D. (University of Florida)
Associate Professor of Sociology (1976-1977).

AHMED, ESAM MAHMOLD, Ph.D. (University of Maryland)
Professor (Food Scientist), IFAS (1964-1973).

AHTOLA, OLLI T., Ph.D. (University of Illinois)
Assistant Professor of Marketing (1973-1973).

AJINKYA, BIPIN B., Ph.D. (University of Minnesota)
Assistant Professor of Accounting (1975-1975).

ALBREGTS, EARL EUGENE, Ph.D. (Purdue University)
Associate Professor (Associate Soils Chemist) IFAS, Agricultural Research Center, Dover (1967-1973).

ALBRIGO, LEO GENE, Ph.D. (Rutgers University)
Associate Professor (Associate Horticulturist), IFAS, Agricultural Research and Education Center, Lake Alfred (1968-1974).

ALDRICH, HENRY CARL, Ph.D. (University of Texas)
Professor, Microbiology and Cell Science, IFAS (1966-1976).

ALDERSON, THOMAS H., D.D.S. (University of Tennessee)
Associate Professor of Removable Prosthodontics, College of Dentistry (1976-1976).

ALEXANDER, ALICE ELIZABETH, B.S. in L.S.
*Librarian and Chairperson, P.K. Yonge Library of Florida History (1951-1976).**

ALEXANDER, JAMES A., M.D., (Duke University)
Associate Professor of Surgery, and Chief of Thoracic and Cardiovascular Surgery (1977-1977).

ALEXANDER, JOHN FRANKLIN, JR., P.E., M.S. (Florida State Univ.)
Associate Professor of Architecture (1975-1975).

ALEXANDER, LEONARD J., Ph.D. (University of Wisconsin)
Visiting Professor in Plant Pathology, IFAS (1969-1969).

ALEXANDER, MYRL E., A.B. (Manchester College)
Adjunct Professor of Criminal Justice (1974-1974)

ALEXANDER, RAYMOND H., M.D. (Duke University)
Assistant Professor of Surgery, VAH (1976-1976).

ALEXANDER, RONALD W., M.D. (Tulane University)
Professor of Pathology, VAH (1972-1977).

ALEXANDER, RUTH HAMMACK, Ed.D. (University of Indiana)
Professor of Physical Education (1969-1974).

ALEXANDER, SAMUEL KERN, Ed.D. (University of Indiana)
Professor of Education (1968-1970).

ALFIERI, SALVATORE ANTHONY, JR., Ph.D. (Cornell University)
Associate Plant Pathologist, Division of Plant Industry (1968-1968)

ALGOZZINE, ROBERT FRANCIS, Ph.D. (Pennsylvania State University)
Assistant Professor of Special Education (1976-1976).

ALLEN, BILLY JAY, M.A. (University of Florida)
*Associate Professor, (Extension 4H-Youth Specialist), IFAS, (1953-1968).**

ALLEN, CHARLES M., JR., Ph.D. (Brandeis University)
Associate Professor of Biochemistry and Molecular Biology (1967-1975).

ALLEN, DON L., D.D.S. (University of North Carolina), M.S. (University of Michigan)
Dean and Professor of Periodonotology, College of Dentistry (1970-1974).

ALLEN, GEORGE E., Ph.D. (Mississippi State University)
Professor of Entomology, IFAS (1971-1971).

ALLEN, JEFFNER M., Ph.D. (Duquesne University)
Assistant Professor of Philosophy (1974-1974).

ALLEN, JOHN JAY, Ph.D. (University of Wisconsin)
Professor of Spanish (1960-1972).

ALLEN, JON C., Ph.D. (U. of Calilornia, Riverside)
Assistant Professor (Assistant Entomologist) IFAS, AREC, Lake Alfred (1973-1974).

ALLEN, LEON HARTWELL, JR., Ph.D. (Cornell University) *
Assistant Professor (Soil Scientist), IFAS, USDA, (1974-1974).

ALLEN, ROBERT EUGENE, Ed.D. (University of Florida)
Associate Professor of Professional Physical Education (1968-1973).

ALLEN, ROBERT JOHN, JR., Ph.D. (University of Maryland)
Assistant Professor (Assistant Agronomist) IFAS, Agricultural Research and Educational Center, Belle Glade (1950-1950).

ALLIGOOD, EDGAR RALEIGH, M.Ed. (University of Florida)
Director, Department of Independent Study by Correspondence, Division of Continuing Education (1965-1965).

ALLISON, JAMES C., Ed.M. (Harvard U.)
Affirmative Action Coordinator (1975-1975).

ALTIZER, ALMA B., Ph.D. (Emory University)
Assistant Professor of Humanities and Literature (1974-1974).

ALTMAIER, ELIZABETH M., Ph.D. (Ohio State)
Assistant Professor of Psychology (1977-1977).

ALVAREZ, JOSE, Ph.D. (University of Florida)
Assistant Professor, Food & Resource Economics, IFAS, AREC, Belle Glade (1977-1977).

AMATEA, ALLEN S., Ph.D. (Florida State University)
Assistant Professor of Education (1974).

AMBROSE, EDNA VIRGINIA, Ed.D. (Columbia University)
Associate Professor of Education (1958-1958).

AMMERMAN, CLARENCE BAILEY, Ph.D. (University of Illinois)
Professor (Animal Nutritionist), IFAS (1958-1970).

ANDERSEN, THORKILD W., M.D. (University of Copenhagen)
Professor of Anesthesiology (1958-1969).

ANDERSON, ARVID A., Ph.D. (University of Texas)
Assistant Professor of Marketing (1965-1965).

ANDERSON, BARBARA JOY, B.S.C. (Utah State University)
Assistant Professor English (1973-1973).

ANDERSON, CARL ANDREW, Ph.D. (Iowa State University)
Associate Professor (Associate Soils Chemist), IFAS Agricultural Research and Educational Center, Lake Alfred (1962-1968).

ANDERSON, CARL ARTHUR, M.B.A., C.P.A. (Univ. of Florida)
Associate Professor of Accounting (1947-1977).

ANDERSON, JAMES W., M.B.A.
Assistant Professor of Journalism and Communications (1973-1974).

ANDERSON, JOHN F., Ph.D. (University of Florida)
Associate Professor of Zoology (1968-1974).

ANDERSON, RICHARD JAMES, Ph.D. (University of Michigan)
Professor of Psychology, Associate University Counseling Center (1943-1956).

ANDERSON, ROLAND CARL, Ph.D. (University of Florida)
Professor of Engineering Sciences (1961-1974). •

ANDERSON-SHANKLIN, GENE, Ph.D. (University of Wisconsin)
Professor, College of Nursing (1977-1977).

ANDRES, JOEL M., M.D. (Suny-Buffalo)
Assistant Professor of Pediatrics (1977-1977).

ANDRESEN, BRIAN DEAN, Ph.D. (Massachusetts Institute of Technology)
Assistant Professor of Pharmaceutical Chemistry (1974-1974).

ANDREW, CHRIS W., Ph.D. (Michigan State University)
Associate Professor of Food and Resource Economics, Assistant Director of International Programs, IFAS (1971-1977).

ANDREW, RAYMOND C., Ph.D. (Purdue University)
Associate Professor and Director of Personnel Affairs, IFAS (1973-1976).

ANDREWS, C. P., Ph.D. (Louisiana State University)
Assistant Professor (Assistant Horticulturalist), IFAS, Agricultural Research Center, Monticello (1975-1975).

ANDREWS, SAMUEL DALTON, Ph.D. (University of Florida)
Assistant Professor of Education (1969-1969).

ANDRIOLA, MARY R., M.D. (Duke University)
Associate Professor of Neurology (1974-1974).

ANGORN, RICHARD ARTHUR, J.D. (University of Florida)
Associate Professor of Pharmacy and Associate Chairman, Pharmacy (1968-1973).

ANNIS, JOSEPH PAYNE, M.D. (Marquette School of Medicine)
Assistant Professor of Anesthesiology (1975-1976).

ANTHONY, DARRELL WAYNE, M.S. (University of Florida)
Adjunct Assistant Professor (1974-1974).

ANTHONY, DAVID SALISBURY, Ph.D. (University of Wisconsin)
Professor of Botany, Arts and Sciences (1955-1972).

ANTONINI, GUSTAVO A., Ph.D. (Columbia University)
Associate Professor of Latin American Studies and Geography (1970-1970).

ANTONSON, DONALD E., D.D.S. (Loyola University)
Assistant Professor Operative Dentistry (1975-1975).

APP, JAMES L., Ph.D. (University of Wisconsin)
Assistant Research Scientist and Assistant Dean for Agricultural Programs, IFAS (1973-1975).

APPLEDORF, HOWARD, Ph.D. (Mass. Institute of Technology)
Associate Professor (Associate Nutritionist), IFAS, 1969-1974).

ARAFA, ABDEL-MONIEM S., Ph.D. (Mississippi State University)
Assistant Professor (Department of Poultry Science), IFAS (1975-1975).

ARANETA, ENRIQUE, M.D. (University of the Philippines)
Associate Professor of Psychiatry, VAH (1973-1973).

ARAUJO, OSCAR EDUARDO, Ph.D. (Purdue University)
Professor of Pharmacy (1962-1974).

ARAUJO, PAUL EDWARD, Ph.D. (Brown University)
Assistant Professor (Assistant Nutritionist), IFAS, (1974-1974).

ARCHAMBO, NORMAN F., D.M.D. (University of Kentucky)
Assistant Professor of Occlusion and Fixed Prosthodontics, College of Dentistry (1977-1977).

ARCHER, BEVERLY B., Ph.D. (Ohio State University)
Associate Professor and Assistant Dean, (FAMU) IFAS (1972-1972).

ARCHER, WAYNE R., Ph.D. (Indiana University)
Assistant Professor of Real Estate and Urban Analysis (1971-1971).

ARDITTI, FRED D., Ph.D. (MIT)
Professor of Economics, Chairperson, Department of Economics (1971-1973).

AREY, SANDRA S., Ph.D. (U. of Florida)
Assistant Professor of Sociology in Psychiatry (1976-1976).

ARIET, MARIO, Ph.D. (University of Florida)
Associate Professor, Community Health and Family Medicine and Department of Medicine (1967-1973).

ARMSTRONG, HELENJANE, M.L.S. (University of Oklahoma)
Associate Librarian, Reference and Bibliography (1973-1973).

ARNOLD, CALVIN EUGENE, Ph.D. (Michigan State University)
Associate Professor (Associate Horticulturist) and Center Director, IFAS, Agricultural Research Center, Monticello (1969-1974).

ARRINGTON, LEWIS ROBERTS, Ph.D. (University of Florida)
Professor of Animal Science and Animal Nutritionist, IFAS, (1946-1967). •

ARVANITIS, LOUKAS G., Ph.D. (University of California)
Professor (Forest Mensuration), IFAS (1976-1976).

ASBURY, ATWOOD C., D.V.M. (Michigan State)
Associate Professor, College of Veterinary Medicine (1977-1977).

ASHAMALLA, MEDHAT G., M.D. (University of Alexandria)
Assistant Professor of Psychiatry, VAH (1974-1974).

ASHLEY, THOMAS ROBERT, Ph.D. (University of California, Riverside)
Assistant Professor (Assistant Entomologist), USDA, IFAS, (1973-1973).

ASHTON, PATRICIA TEAGUE, Ph.D. (University of Georgia)
Assistant Professor of Education (1974).

ASQUITH, RICHARD LAVERNE, D.V.M. (Michigan State Univ.)
Associate Professor of Equine Health, IFAS (1975-1975).

ATTAWAY, JOHN A., Ph.D. (Duke University)
Adjunct Professor (Chemist), IFAS, DC, AREC-Lake Alfred (1959-1969).

AUBIN, CAROL, B.S. (University of Florida)
Women's Sports Information Director (1975-1975).

AUFFENBERG, WALTER, Ph.D. (University of Florida)
Curator of Herpetology, Florida State Museum and Joint Professo of Zoology (1956-1968). •

AUGUSTINE, JIMMY JUDE, Ph.D. (University of California)
Assistant Professor (Assistant Geneticist), IFAS, Agricultural Research and Education Center, Bradenton (1975-1975).

AUXTER, THOMAS P., Ph.D. (Bryn Mawr College)
Assistant Professor of Philosophy (1973-1973).

AVILA, DONALD LEE, Ed.D. (University of Nebraska)
Professor of Education (1963-1970).

AXELSON, JULEIN MARIE, M.S. (Florida State University)
Assistant Professor (Assistant Nutritionist), (FAMU) IFAS, (1973-1973).

AYOUB, ELIA M., M.D. (American University of Beirut)
Professor of Pediatrics, Professor of Immunology and Medical Microbiology, and Chief, Infectious Diseases and Immunology (1969-1971).

BACHMAN, KERMIT C., Ph.D. (University of Maryland)
Associate Professor (Biochemist), IFAS (1971-1977).

BACON, PHILIP, Ph.D. (University of Tennessee)
Associate Professor of Mathematics (1965-1968).

BAER, HERMAN, M.D. (Basel)
Director of Clinical Microbiology and Associate Professor of Pathology and Immunology and Medical Microbiology (1966-1970).

BAGNALL, LARRY OWEN, Ph.D. (Cornell University)
Associate Professor (Associate Agricultural Engineer), IFAS, (1969-1974).

BAIG, MIZRA M., Ph.D. (State University of New York)
Assistant Professor of Pediatrics (1975-1975).

BAILEY, BRYAN ALLISON, Ph.D. (Purdue University)
Assistant Professor (Agronomist), IFAS (1977-1977).

BAILEY, DONALD L., Ph.D. (Oklahoma State University)
Adjunct Professor (1970-1970).

BAILEY, K. E., III, Ph.D. (University of North Carolina)
Assistant Professor of Accounting (1976-1976).

BAILEY, LYNN BONNETTE, Ph.D. (Purdue University)
Assistant Professor (Assistant Nutritionist), IFAS (1977-1977).

BAILEY, ROBERT LEO, M.S.E.
Associate Professor of Electrical Engineering (1960-1972).

BAILEY, THOMAS LEE, III, Ph.D. (University of Chicago)
Professor of Physics and Electrical Engineering (1953-1963).

BAIRD, BRIDGET BOS, Ph.D. (State University of New York at Buffalo)
Visiting Assistant Professor of Mathematics (1976-1976).

BAIRD, CARL DIRELLE, Ph.D. (University of Florida)
Associate Professor (Associate Agricultural Engineer) IFAS (1968-1976).

BAKER, AMANDA S., Ph.D. (University of Florida)
Assistant Dean, Undergraduate Program and Associate Professor, College of Nursing (1974-1974).

BAKER, FRANK SLOAN, JR., M.S.A. (University of Florida)
Professor, (Animal Husbandman), IFAS, Agricultural Research and Education Center, Quincy (1945-1963).

BAKER, SUSAN READ, Ph.D. (Harvard University)
Assistant Professor of French (1976-1976).

BALANOFF, NEAL, Ph.D. (Northwestern University)
Director of Learning Resources Center, J. Hillis Miller Health Center, and Professor of Instructional Development, College of Dentistry (1973-1973).

BALDWIN, FLETCHER NATHANIEL, JR., LL.M.
Professor of Law (1962-1968).

BALDWIN, LLOYD BARRINGTON, M.Ag. (University of Florida)
Associate Professor (Associate Agricultural Engineer), IFAS (1967-1977).

BALDWIN, NANCY, Ed.D. (University of Florida)
Assistant Professor of Education, P.K. Yonge Laboratory School (1970-1970).

BALDWIN, RUTH, Ph.D. (University of Illinois)
Librarian and Curator, Children's Literature Collection (1955-1977).

BALL, JOE CROCKETT, Ph.D. (University of California, Berkeley)
Assistant Professor (Assistant Entomologist), IFAS, Agricultural Research Center, Monticello (1974-1974).

BALL, JOSEPH EDWARD, M.S. (George Washington University)
Business Manager, Division of Housing (1970-1977).

BALLARD, STANLEY SUMNER, Ph.D. (University of California)
D.Sc., Professor of Physics (1958-19S8).

BALLINGER, WILLIAM E., JR., M.D. (University of Florida)
Assistant Professor of Pathology, VAH (1977-1977).

BANKS, JOHN, M.Ed.
Teacher, P.K. Yonge Laboratory School (1972-1972).

BARANOWSKI, RICHARD MATTHEW, Ph.D. (University of Connecticut)
Professor (Entomologist), IFAS, Agricultural Research and Education Center, Homestead (1956-1967).

BARBOSA, JERRY L., M.D. (University of Madrid)
Assistant Professor of Pediatrics (1976-1976).

BARFIELD, CARL S., Ph.D. (Texas A & M University)
Assistant Research Scientist (Assistant Professor), IFAS (1976-1976).

BARGER, BENJAMIN, Ph.D. (Duke University)
Clinical Psychologist (1959-1959).

BARINGER, WILLIAM ELDON, Ph.D. (University of Illinois)
Professor of Social Sciences and History (1947-1949).

BARKSDALE, E. C., Ph.D. (Ohio Sate University)
Assistant Professor of Russian (1972-1972).

BARMORE, CHARLES R., Ph.D. (University of Florida)
Associate Professor (Associate Horticulturist) IFAS, AREC-Lake Alfred (1972-1977).

BARNARD, GEORGE W., M.D. (University of North Carolina)
Associate Professor of Psychiatry, VAH (1963-1969).

BARNETT, RONALD DAVID, Ph.D. (Purdue University)
Associate Professor (Associate Agronomist), IFAS, Agricultural Research and Education Center, Quincy (1970-1975).

BARRICK, WILLIAM EDGAR, Ph.D. (Michigan State University)
Assistant Professor (Ornamental Horticulturist), IFAS (1976-1976).

BARRON, RODGER W., B.A.
Adjunct Assistant in Chemistry, IFAS, DC, AREC-Lake Alfred (1956-1967).

BARRY, CHRISTOPHER B., D.B.A.
(Indiana University)
Associate Professor of Management (1973-1976).

BARTHOLIC, JON F., Ph.D. (South Dakota State University)
Professor (Climatologist), IFAS (1971-1976).

BARTLETT, MARION CLEMENT, M.E.E.
Associate Engineer in Electrical Engineering (1970-1976).

BARTLEY, ERNEST R., Ph.D. (University of California)
Professor of Political Science and Urban and Regional Planning (1949-1955).

BARTON, PAULINE HINTON, Ed.D. (University of Florida)
Professor, College of Nursing (19S9-1973).

BARTZ, JERRY A., Ph.D. (University of Wisconsin)
Associate Professor (Assistant Plant Pathologist), IFAS (1969-1969).

BASHAM, HERSY GRANT, Ph.D. (Cornell University)
Assistant Professor (Assistant Plant Pathologist), IFAS, Agricultural Research Center, Ft. Lauderdale (1976-1976).

BASS, RONALD K., Ph.D. (Michigan State University)
Associate Professor of Dental Education, College of Dentistry (1972-1977).

BASSETT, MARK JULIAN, Ph.D. (University of Maryland)
Assistant Professor (Horticulturist), IFAS (1970-1970).

BASTYR, PAUL J., M.L.S.
Assistant Librarian, Circulation (1977-1977).

BATES, ROBERT PARKER, Ph.D. (M.I.T.)
Associate Professor (Associate Food Scientist) (1967-1974).

BATES, ROGER GORDON, Ph.D. (Duke University)
Professor of Chemistry (1969-1969).

BATES, STANLEY RAYMOND, Ph.D. (University of Florida)
Assistant Engineer in Materials Science and Engineering (1969-1973).

BATTISTE, MERLE ANDREW, Ph.D. (Columbia University)
Professor of Chemistry (1961-1970).

BAUER, THOMAS J., M.S. (Harvard University)
Associate In Radiation Control; HEAD, Radiation Control and Radiological Services (1977-1977).

BAUGHMAN, RONALD A., D.D.S. (Medical College of Virginia) M.S.D. (Indiana University)
Associate Professor, Oral Medicine and Pathology (Dentistry) (1971-1974).

BAUM, ERIC A., M.D. (University of Michigan)
Associate Professor of Psychiatry (197S-1975).

BAUMER, G. HARRY, III, B.S.B.A. (University of Florida)
Director of Purchasing (1965-1966).

BAXTER, JOHN FRANKLIN, Ph.D. (Johns Hopkins), Honorary D.Sc. (Bethany)
*Distinguished Service Professor of Chemistry (1952-1974).**

BAYLEY, SUZANNE E., Ph.D. (Johns Hopkins University)
Assistant Professor of Environmental Engineering Sciences (1973-1973).

BAZER, FULLER WARREN, Ph.D. (North Carolina University)
Associate Professor (Associate Animal Physiologist), IFAS (1968-1973).

BEARDSLEY, DANIEL WALDO, Ph.D. (University of Illinois)
*Professor (Animal Nutritionist), IFAS, Agricultural Research and Educational Center, Belle Glade (1949-1968).**

BEAULIEU, LIONEL, Ph.D. (Purdue University)
Assistant Professor (Extension 4-H Youth Specialist) IFAS (1977-1977).

BECHT, PAUL A., M.Ed. (University of Florida)
Assistant Professor, P. K. Yonge (1968-1975).

BECHTEL, GORDON G., Ph.D. (University of Michigan)
Professor of Marketing (1974-1974).

BECK, WILLIAM M., JR., M.S. (University of Florida)
Associate Professor (Associate Entomologist), (FAMU), IFAS (1973-1973).

BECKER, CHARLES HENRY, Ph.D. (University of Florida)
Professor of Pharmacy and Assistant Dean for Student Affairs College of Pharmacy (1947-1974).

BECKER, H. NEIL, D.V.M., M.S. (University of Illinois)
Associate Professor (Associate Veterinarian), College of Veterinary Medicine, IFAS (1974-1974).

BEDNAREK, ALEXANDER ROBERT, Ph.D. (University of Buffalo)
Professor of Mathematics and Chairperson of Department (1963-1969).

BEEGHLEY, LEONARD, Ph.D. (University of California at Riverside)
Assistant Professor of Sociology (1973-1973).

BEEMAN, CARL EDGAR, Ed.D. (Cornell University)
Associate Professor and Chairperson, Agriculture and Extension Education (1967-197S).

BEIRNE, RAYMOND MICHAEL, M.A. (Columbia University)
Associate Professor or English (1954-1969).

BEISTLE, MARGARET R., M.A.
Assistant Dean for Student Services (1964-197S).

BELAR, CYNTHIA D., Ph.D. (Ohio University)
Assistant Professor of Clinical Psychology and Psychology (1974-1976).

BELL-NATHANIEL, AFESA, Ph.D. (University of Utah)
Acting Chairperson and Assistant Professor of Behavioral Studies and Psychology (1974-1974).

BENGSTON, GEORGE W., Ph.D. (Yale University)
Associate Professor, TVA, IFAS, (1968-1968).

BENGSTON, JOHN KONSTANT, Ph.D. (University of Toledo)
Assistant Professor of Education (1974).

BENNETT, CARROLL G., D.D.S., M.S. (Medical College of Virginia)
Professor and Chairman of Pediatric Dentistry, College of Dentistry (1973-1974).

BENNETT, GERALD THOMAS, J.D. (University of Florida)
*Professor of Law (1968-1974).**

BENNETT, ROBERT BROADHURST, Ph.D. (Purdue University)
*Professor of Chemical Engineering (1953-1953).**

BENNINGER, LAWRENCE J., Ph.D. (University of Missouri)
Professor of Accounting (1956-1959).

BENSON, ROY T., B.A.
Head Track Coach (1969-1976).

BENTLEY, GEORGE ROBERT, Ph.D. (University of Wisconsin)
Professor of Social Sciences and History (1938-1972).

BERARDO, FELIX M., Ph.D. (Florida State University)
Professor of Sociology (1969-1973).

BERG, SANFORD V., Ph.D. (Yale University)
Associate Professor of Economics (1971-1976).

BERG, WILLIAM KEITH, Ph.D. (University of Wisconsin)
Associate Professor of Psychology (1973-1976).

BERGER, RICHARD DONALD, Ph.D. (University of Wisconsin)
Professor (Plant Pathologist), IFAS (1967-1976).

BERGMAN, JAY, M.A. (Appalachian State)
Head Baseball Coach (1975-1975).

BERKHOFF, GERMAN A., D.V.M., Ph.D. (University of Chile)
Associate Professor (Associate Microbiologist), College of Veterinary Medicine, IFAS (1977-1977).

BERNARD, DONALD HARRY, Ed.D. (Columbia University)
Associate Professor of Education (1969-1976).

BERNER, LEWIS, Ph.D. (University of Florida)
Professor of Zoology and Entomology (1946-1970).

BERNS, KENNETH I., M.D., Ph.D. (Johns Hopkins University)
Professor and Chairman of Immunology and Medical Microbiology, and Professor of Pediatrics (1976-1976).

BERNSTEIN, JERALD J., Ph.D. (University of Michigan)
Professor of Neuroscience and Opthalmology (1965-1976).

BERTRAND, JOSEPH E., Ph.D. (Louisiana State University)
Professor (Animal Scientist), IFAS Agricultural Research and Education Center, Jay (1966-1977).

BESCH, EMERSON L., Ph.D. (University of California at Davis)
*Professor of Physiology and Associate Dean, College of Veterinary Medicine and Professor, Department of Veterinary Science and Mechanical Engineering (1974-1975).**

BETHEA, SALLY BROOK, M.L.S.
Associate Librarian, Catalog (1959-1970).

BEVIS, HERBERT ANDERSON, Ph.D. (University of Florida)
Professor of Environmental Engineering Sciences (1961-1974).

BEYERCHEN, ALAN D., Ph.D. (University of California Santa Barbara)
Assistant Professor of History (1976-1976).

BEYETTE, THOMAS K., Ph.D. (University of Texas at Austin)
Associate Professor of English (1969-1974).

BIAMONTE, RICHARD LOUIS, Ph.D. (Cornell University)
Assistant Professor (Extension Ornamental Horticulturist), IFAS Agricultural Research and Education Center, Homestead (1976-1976).

BICKFORD, DAVID M., B.B.A., C.P.A. (Eastern New Mexico University)
Director, Office of Internal Control (1964-1975).

BIEBER, JOHN L., Ph.D. (University of Florida)
Assistant Research Scientist, International Programs, IFAS, El Salvador (1974-1974).

BIERY, JOHN CARLTON, Ph.D. (Iowa State University)
Professor of Chemical Engineering and Chairperson of the Department (1971-1971).

BIGELOW, GORDON ELLSWORTH, Ph.D. (Johns Hopkins University)
*Professor of English (1951-1967).**

BIGHAM, JERRY L., B.A. (Florida State University)
Computer Research Specialist (1976-1976).

BIGGS, ROBERT HILTON, Ph.D. (Purdue University)
Professor (Biochemist), IFAS (1957-1968).

BIGGS, THOMAS S., JR., L.L.B.
University Attorney (1969-1969).

BILL, ROBERT G., JR., Ph.D. (Cornell University)
Assistant Research Scientist in Fruit Crops, IFAS (1976-1976).

BINGHAM, HAL B., M.D. (University of Kansas)
Professor of Surgery and Chief of Plastic and Reconstructive Surgery (1972-1972).

BIRDSELL, DALE C., Ph.D. (University of California)
Associate Professor of Basic Dental Sciences, College of Dentistry (1974-1976).

BISHOP, JOHN P., Ph.D. (Texas A & M University)
Assistant Research Scientist, International Programs, IFAS, INIAP, Ecuador (1972-1972).

BITTON, GABRIEL, Ph.D. (Hebrew University)
Associate Professor of Environmental Engineering Sciences (1974-1977).

BLACK, ROBERT JOHN, Ph.D. (University of Tennessee)
Assistant Professor (Extension Ornamental Horticulturalist), IFAS (1975-1975).

BLAIR, BILLY R., M.A.T. (University of Montevallo)
Associate Director for Curriculum and Instruction Treeo Center, Division of Continuing Education (1976-1976).

BLAIR, JAMES G., B.S.M.E. (North Carolina State College)
Adjunct Associate Professor (Associate Mechanical Engineer) IFAS DC, AREC-Lake Alfred (1962-1962).

BLAIR, ROGER DUNCAN, Ph.D. (Michigan State University)
Associate Professor of Economics (1970-1974).

BLAIR, TIMOTHY RAWLINGS, Ph.D. (University of Illinois)
Assistant Professor of Curriculum & Instruction (1976-1976).

BLAKESLEE, GEORGE M., Ph.D. (Duke University)
Assistant Professor, (Forest Pathology), IFAS (1976-1976).

BLAKEY, ARCH FREDRIC, Ph.D. (Florida State University)
Associate Professor of Social Sciences and History (1969-1974).

BLANCHARD, FRANK NELSON, Ph.D. (University of Michigan)
Professor of Geology (1958-1976).

BLASHFIELD, ROGER K., Ph.D. (Indiana University)
Associate Professor of Psychology in Psychiatry (1977-1977).

BLAZQUEZ, CARLOS H., Ph.D. (University of Florida)
Associate Professor (Associate Plant Pathologist), IFAS Agricultural Research Center, Lake Alfred (1966-1972).

BLEIWEIS, ARNOLD S., Ph.D. (Pennsylvania State University)
Associate Chairperson and Professor, Microbiology and Cell Science, IFAS (1967-1976).

BLEVINS, DONALD KING, Ph.D. (University of Michigan)
Assistant Professor of Mathematics (1972-1972).

BLOCK, ALAN JAY, M.D. (Johns Hopkins University)
Professor and Chief of Pulmonary Medicine, Anesthesiology and Medicine, VAH (1970-1975).

BLOCK, EDWARD R., M.D. (Johns Hopkins School of Medicine)
Assistant Professor of Medicine (1975-1975).

BLOCK, LOUIS, Ph.D. (Northwestern)
Assistant Professor of Mathematics (1973-1973).

BLOCK, SEYMOUR STANTON, Ph.D. (Pennsylvania State University)
Professor of Chemical Engineering (1944-1966).

BLOODWORTH, BERTHA ERNESTINE, Ph.D. (University of Florida)
Assistant Professor of English (1961-1961).

BLOOM, STEPHEN A., Ph.D. (University of Washington)
Assistant Professor of Zoology (1976-1976).

BLUE, RICHARD ARTHUR, Ph.D. (University of Wisconsin)
Associate Professor of Physics (1966-1973).

BLUE, WILLIAM GUARD, Ph.D. (University of Missouri)
Professor of Soil Science (Soil Chemistry), IFAS (1950-1963).

BLUME, ROBERT ALLEN, Ph.D. (University of Michigan)
Associate Professor of Education (1969-1972).

BLUNT, TERI S., B.A. (University of Florida)
Assistant in Computer Science, Bureau of Economic and Business Research (1977-1977).

BOCK, DOUGLAS GREGORY, Ph.D. (Southern Illinois University)
Associate Professor of Speech (1971-1974).

BOCK, E. WILBUR, Ph.D. (Iowa State University)
Associate Professor of Sociology (1963-1973).

BOCK, EMILY HOPE, Ph.D. (Southern Illinois University)
Associate Professor of Behavioral Studies and Speech (1972-1976).

BOCK, MARTHA R., M.A.T. (University of Florida)
Teacher, P. K. Yonge Laboratory School (1972-1972).

BODINE, WILLIS RAMSEY, JR., M.M.
Professor of Music (1959-1976).

BODO, TANYA, M.A. (University of Florida)
Assistant Professor, College of Nursing (1974-1977).

BOLCH, WILLIAM EMMETT, JR., Ph.D. (University of California)
Professor of Environmental Engineering Sciences (1966-1977).

BOLDUC, ELROY JOSEPH, Ed.D. (University of Tennessee)
Associate Professor of Education (1969-1974).

BONDS, LELIA T., Ed.S. (Georgia Southern College)
Instructor, P. K. Yonge Laboratory School (1977-1977).

BONNEVILLE, DOUGLAS A., Ph.D. (Ohio State University)
Professor of French (1963-1976).

BOOTE, KENNETH JAY, Ph.D. (Purdue University)
Assistant Professor (Assistant Agronomist), IFAS, (1974-1974).

BOSSHARDT, DONALD I., B.B.A. (University of Wisconsin)
Assistant Professor of Finance (1975-1975).

BOWDEN, LOIS A.
Associate Hospital Director, Quality Assurance, Shands Teaching Hospital and Clinics (1975-1975).

BOWES, GEORGE, Ph.D. (University of London, England)
Assistant Professor of Botany, Arts and Sciences (1972-1972).

BOWLES, RICHARD WILLIAM, M.S.
Professor of Music (1958-1967).

BOWMAN, EARL K., B.S. (Virginia Polytechnic Institute)
Associate Industrial Engineer; USDA, Associate Professor, IFAS, (1957-1957).

BOWMAN, JOHN F., D.M.D. (Tufts University)
Professor and Chairman of Removable Prosthodontics, College of Dentistry (1969-1974).

BOWMAN, THOMAS THEODORE, Ph.D. (Tulane University)
Assistant Professor of Mathematics (1970-1970).

BOYCE, RICHARD P., Ph.D. (Yale University)
Professor of Biochemistry and Molecular Biology (1971-1971).

BOYD, CLIFFORD ALLEN, Ed.D. (Boston University)
Dean, College of Physical Education, Health, and Recreation and Professor of Professional Physical Education (1950-1970).

BOYD, ROBERT L., D.D.S. (Temple University)
Assistant Professor of Orthodontics, College of Dentistry (1976-1976).

BOYETT, JAMES M., Ph.D. (Michigan State University)
Assistant Professor of Statistics (1974-1974).

BOYKIN, WILLIAM HENRY, JR., Ph.D. (Stanford University)
Professor of Engineering Sciences; Professor, Electrical Engineering; Professor, Industrial and Systems Engineering (1967-1975).

BOYLES, JESSE V., III, Ph.D. (University of Florida)
Assistant Professor of Accounting (1975-1975).

BOYSEN, BETTE E., M.D. (Loyola University)
University Physician (1975-1975).

BOYSEN, PHILIP G., M.D. (Loyola-Stritch)
Assistant Professor of Medicine and Anesthesiology (1977-1977).

BRACKBILL, YVONNE, Ph.D. (Stanford)
Graduate Research Professor of Psychology, Obstetrics, Gynecology, and Pediatrics (1975-1975).

BRADDOCK, ROBERT J., (Michigan State University)
Associate Professor (Associate Food Scientist) IFAS, AREC-Lake Alfred (1970-1975).

BRADLEY, RICHARD ALAN, M.A.
Associate in Natural Sciences, Florida State Museum (1975-1975).

BRADLEY, RICHARD E., Ph.D. (University of Georgia)
Professor (Parasitologist), College of Veterinary Medicine, IFAS (1968-1968).

BRANCH, MARC NICHOLS, Ph.D. (University of Maryland)
Associate Professor of Psychology (1973-1976).

BRANDMAN, RUSSELLA, Ph.D. (Florida State University)
Assistant Professor of Theatre (1973-1977).

BRANDNER, EUGENE A., B.Arch.
University Physical Planning Consultant, Facilities Planning and Operations, J. Hillis Miller Health Center (1975-1975).

BRANTLEY, RICHARD ESTES, Ph.D. (Princeton University)
Associate Professor of English (1969-1974).

BRASHER, JAMES JACKSON, Ph.D. (Louisiana State University)
Assistant Dean and Associate Professor 4-H and Other Youth Programs, IFAS (1973-1973).

BRASK, WILLARD JOHN GUSTAVE, M.M.
Professor of Music (1963-1977).

BRAUN, JANE D., A.M.D. (Florida State University)
Assistant Law Librarian (1974-1974).

BRAYLAN, RAUL C., M.D. (Buenos Aires Medical School)
Associate Professor of Pathology (1977-1977).

BRECHNER, BEVERLY LORRAINE, Ph.D. (Louisiana State)
Associate Professor of Mathematics (1968-1971).

BRECHNER, JUDITH A., J.D. (University of Miami)
Associate University Attorney (1972-1972).

BRECKE, BARRY JOHN, Ph.D. (Cornell University)
Assistant Professor (Assistant Agronomist), IFAS (1975-1975).

BREDAHL, A. CARL, Ph.D. (Pittsburgh University)
Associate Professor of English (1970-1976).

BREEZE, MARSHALL H., M.A. (University of Florida)
Assistant Professor (Assistant Editor), IFAS (1974-1974).

BREIVOGEL, WILLIAM FRANCIS, Ed.D. (Rutgers University)
Associate Professor of Education (1966-1974).

BRELAND, HERMAN LEROY, Ph.D. (University of Illinois)
Professor of Soil Science (Soil Chemistry) IFAS (1952-1976).

BRENDEMUEHL, RAYMOND HUGO, Ph.D. (Iowa State University)
Associate Professor, U.S. Department of Agriculture, IFAS, (1968-1968).

BREY, WALLACE, SIEGFRIED, JR., Ph.D. (University of Pennsylvania)
Professor of Chemistry (1952-1964).

BRESTEL, ERIC P., M.D. (University of Florida)
Instructor of Medicine (1976-1976).

BREZONIK, PATRICK LEE, Ph.D. (University of Wisconsin)
Professor of Environmental Engineering Sciences (1966-1976).

BRIENT, BRUCE W., M.D. (University of Kansas)
Assistant Professor of Surgery (1975-1975).

BRIGHAM, EUGENE F., Ph.D. (University of California at Berkeley)
Graduate Research Professor (1971-1971).

BRIGHT, ROBERT W., M.D. (George Washington University)
Associate Professor of Orthopaedic Surgery and Chief of Pediatric Orthopaedic Services (1974-1977).

BRITT, MARY STEVENSON, M.S. (Bowman-Gray School of Medicine)
Chairman and Associate Professor, Department of Medical Technology (1974-1974).

BROCKMANN, H. JANE, Ph.D. (University of Wisconsin)
Assistant Professor of Zoology (1976-1976).

BRODKORB, PIERCE, Ph.D. (University of Michigan)
Professor of Zoology (1946-1955).

BROGDON, JAMES EDISON, M. Agr.
Professor (Entomologist) IFAS (1955-1966).

BROLMANN, JOHANNES BERNARDUS, Ph.D. (University of Florida)
Assistant Professor (Assistant Legume Breeder) IFAS, Agricultural Research Center, Ft. Pierce (1969-1969).

BROOKBANK, JOHN WARREN, Ph.D. (California Institute of Technology)
Professor, Microbiology and Cell Science, IFAS (1955-1968).

BROOKE, DONALD LLOYD, Ph.D. (University of Illinois)
Professor, Food and Resource Economics Department, IFAS (1946-1962).

BROOKMAN, JAMES R., Ph.D. (University of St. Andrews, Scotland)
Associate Professor of Physical Sciences and Physics (1971-1977).

BROOKEMAN, VALERIE ANNE, Ph.D. (University of St. Andrews, Scotland)
Associate Professor of Radiology (1971-1972).

BROOKS, HAROLD KELLY, Ph.D. (Harvard University)
Professor of Geology, Civil Engineering and Coastal Engineering (1956-1971).

BROOKS, JAMES KEITH, Ph.D. (Ohio State University)
Professor of Mathematics (1967-1972).

BROOKS, ROBERT F., Ph.D. (University of Wisconsin)
Professor (Entomologist) IFAS, AREC-Lake Alfred (1960-1971).

BROOKS, THURSTON L., JR., B.S.
Assistant Professor, Food and Resource Economics Department, IFAS, DC.

BROUILLETTE, MARY JOAN, M.Ed. (University of Houston)
Visiting Assistant Professor of Medical Technology (1976-1976).

BROWN, ASHMUN, J.D. (Boston University)
Associate University Attorney (1974-1974).

BROWN, BOB B., Ph.D. (University of Wisconsin)
Professor of Foundations of Education (1965-1971).

BROWN, BRISBANE H., JR., Ph.D. (Oklahoma State University)
Associate Professor of Building Construction (1974-1974).

BROWN, DELINDUS RICHARD, Ph.D. (Indiana University)
Assistant Professor of Speech (1974-1974).

BROWN, DONALD EDWARD, M.Ed.
Assistant Coach (1962-1962).

BROWN, G. ELDON, Ph.D. (U. of Minnesota)
Adjunct Professor (Plant Pathologist) IFAS, DC, AREC-Lake Alfred (1965-1976).

BROWN, HENRY CLAY, Ph.D. (University of Florida)
Professor of Chemical Engineering and Professor of Chemistry (1952-1956).

BROWN, JAMES, B.A.
Assistant Basketball Coach (1976-1976).

BROWN, JEAN WOODLEY, M.Ed.
Instructor, P.K. Yonge Laboratory School (1967-1968).

BROWN, WILLIAM SAMUEL, Ph.D. (State Univ. of New York)
Associate Professor of Speech (1968-1976).

BROWNELL, WILLIAM E., Ph.D. (University of Chicago)
Assistant Professor of Surgery (Otolaryngology) and Neuroscience (1974-1974).

BROWNING, CHARLES BENTON, Ph.D. (Kansas State)
Professor and Dean for Resident Instruction, IFAS (1966-1969).

BROWNING, RUTH ANNE, M.S. (Kansas State University)
Assistant Professor of Clinical and Community Dietetics (1974-1974).

BRUGGER, DAVID J., M.S.
Associate in Broadcasting and General Manager, WUFT-TV (1977-1977).

BROYLES, ARTHUR AUGUSTUS, Ph.D. (Yale University)
*Professor of Physics and Physical Science (1949-1961).**

BRUNN, ALICE LEFLER, M.S. in L.S.
Assistant Librarian, Engineering and Physical Science (1972-1972

BRUNSON, JIMMIE MELVIN, B.S.B.A.
Assistant in Engineering and Assistant Director, Engineering and Industrial Experiment Station (1970-1975).

BRUNSWICK, RICHARD A., M.D. (Jefferson Medical College)
Assistant Professor of Surgery (1976-1976).

BRUSS, MICHAEL L., D.V.M. (Colorado State)
Ph.D. (University of California at Davis)
Assistant Professor of Physiological Chemistry and Veterinary Science, College of Veterinary Medicine (1975-1975).

BRYAN, HERBERT HARRIS, Ph.D. (Cornell University)
Associate Professor (Associate Horticulturist), IFAS, Agricultural Research and Education Center, Homestead (1964-1972).

BRYAN, ROBERT ARMISTEAD, Ph.D. (University of Kentucky)
*Vice President for Academic Affairs and Professor of English (1957-1975).**

BUCCIARELLI, RICHARD L., M.D. (University of Michigan)
Assistant Professor of Pediatrics (1977-1977).

BUCHANAN, DAVID WESLEY, Ph.D. (Rutgers University)
Associate Professor (Associate Horticulturist), IFAS (1967-1973).

BUCHER, JOHN F., D.D.S. (University of Pittsburgh), M.S. (University of Michigan)
Professor and Chairman of Endodontics, College of Dentistry (1969-1974).

BUCHHOLZ, ROBERT A., M.D. (University of Florida)
University Psychiatrist, Chief, Clinical Services (1977-1977).

BUCHLER, J. ROBERT, Ph.D. (University of California)
Associate Professor of Physics and Astronomy (1974-1974).

BUCK, DOUGLAS LLOYD, M.Ag.
Assistant in Medical and Health Communications; Director, Health Center Communications, J. Hillis Miller Health Center (1965-1975).

BUCKLEY, MICHAEL T., Ph.D. (Univ. Mass.)
Assistant Professor of German (1975-1975).

BUERGELT, CLAUS D., D.V.M. (Hannover Veterinary College)
Associate Professor, College of Veterinary Medicine (1977-1977).

BUFFINGTON, DENNIS ELVIN, Ph.D. (University of Minnesota)
Associate Professor of Agricultural Engineering, IFAS (1971-1976

BUHL, JOANNE M., M.Ed. (University of Florida)
Assistant in Psychiatry (1976-1976).

BULLOCK, ROBERT CROSSLY, Ph.D. (University of Connecticut)
Associate Professor (Associate Entomologist) IFAS Agricultural Research Center, Ft. Pierce (1961-1961).

BULLOCK, THOMAS EDWARD, JR., Ph.D. (Stanford University)
Professor of Electrical Engineering (1966-1974).

BURCHARDT, HANS, M.S. (University of Florida)
Assistant Professor of Orthopaedic Surgery (1976-1976).

BURDITT, ARTHUR KENDALL, Ph.D. (University of Minnesota)
Professor (Entomologist), IFAS, USDA (1972-1972).

BUREN, WILLIAM F., Ph.D. (Cornell University)
Professor (Entomolgist), IFAS (1973-1973).

BURGESS, PATRICK P., M.S.P.H. (University of North Carolina)
Assistant Professor of Obstetrics and Gynecology (1970-1970).

BURGIS, DONALD STAFFORD, M.S.A. (University of Florida)
Professor (Horticulturist), IFAS, Agricultural Research and Education Center, Bradenton (1946-1973).

BURGOON, JUDEE KATHELENE, Ed.D. (West Virginia University)
Assistant Professor of Speech (1974-1975).

BURGOON, MICHAEL H., Ph.D. (Michigan State University)
Associate Professor of Speech (1974-1974).

BURK, WILLIAM L., M.S. (University of Missouri)
Assistant Professor, Extension Human Development Specialist (1976-1976).

BURKETT, BARBARA A., J.D. (University of Iowa)
Assistant Professor (1977-1977).

BURNAP, CHARLES ALAN, Ph.D. (Harvard University)
Assistant Professor of Mathematics (1976-1976).

BURNES, JAMES ALTON, D., Phil. (Oxford University)
Professor of Law (1968-1969).

BURNETT, HARRY COPPIN, M.S. (University of Florida)
Associate Plant Pathologist, Div. of Plant Industry, IFAS (1968-1968).

BURNS, ALLAN F., Ph.D. (University of Washington)
Visiting Assistant Professor of Anthropology (1976-1977).

BURNS, AUGUSTUS MERRIMON, III, Ph.D. (University of North Carolina)
Assistant Professor of Social Sciences and History (1967-1967).

BURNS, DOUGLAS, M.L.S. (University of Texas)
Assistant Librarian, Documents (1967-1967).

BURNS, JAMES FRANKLIN, Ph.D. (Massachusetts Institute of Technology)
Professor of Industrial and Systems Engineering (1966-1975).

BURNS, LORETTA S., Ph.D. (University of Michigan)
Assistant Professor of English (1977-1977).

BURNS, MARY FERRIS, M.L.S. (University of Texas)
Assistant Librarian, Latin American Collection (1975-1975).

BURNS, WILLIAM CALVIN, M.S.
Assistant Professor (Location Leader), and Center Director, IFAS, USDA, Brooksville Beef Cattle Research Station (1954-1977).

BURRIDGE, MICHAEL J., B.V.M. & S. (Edinburg University)
Ph.D. (University of California at Davis)
Associate Professor, College of Veterinary Medicine (1976-1976).

BURROWS, LEE, B.B.A. (Marshall University)
Assistant Director Auxiliary Services (1969-1971).

BURT, EVERT OAKLEY, Ph.D. (Ohio State University)
Professor (Ornamental Horticulturist) IFAS, Agricultural Research Center, Ft. Lauderdale (1962-1969).

BUSBY, WALTER A., Ed.D. (Michigan State University)
Associate Professor of Education (1968-1974).

BUSH, TED J., M.S.
Assistant Professor of Journalism and Communications (1972-1973).

BUSHNELL, DAVID, Ph.D. (Harvard University)
Professor of History (1963-1968).

BUSHNELL, PETER STERLING, M.L.S.
Associate Librarian, Catalog (1972-1977).

BUSLIG, BELA S., Ph.D. (University of Florida)
Adjunct Assistant Professor (Assistant Biochemist), IFAS, DC, AREC-Lake Alfred (1967-1971).

BUSS, DARYL D., D.V.M. (U Minnesota) Ph.D. (U Wisconsin)
Associate Professor, College of Veterinary Medicine and Division of Cardiology, College of Medicine (1976-1976).

BUSEY, PHILIP, Ph.D. (University of Arizona)
Assistant Professor (Assistant Turfgrass Breeder), IFAS,

BUTLER, GEORGE BERGEN, Ph.D. (University of North Carolina)
Professor of Chemistry and Research Professor (1946-1957).

BUTLER, GLENN A., Ed.D. (Oklahoma State University)
Professor of Journalism and Communications and Assistant Dean (1966-1975).

BUTLER, JERRY FRANK, Ph.D. (Cornell University)
Associate Professor (Associate Entomologist), IFAS, (1968-1974).

BUTLER, SHERMAN LINVILLE, M.L.S.
Associate Librarian, Reference and Bibliography (1968-1974).

BUTT, ARNOLD FREDERICK, M. Arch. (Rice University)
Professor of Architecture and Chairperson of the Department of Architecture (1952-1968).

BUTTERWORTH, JAMES DONALD, Ph.D. (Northwestern University)
*Professor of Marketing (1955-1958).**

BUTTON, JAMES W., Ph.D. (University of Texas)
Assistant Professor of Social Sciences and Political Science, Adviser (1973-1973).

BUTTON, ROBERT A., M.LTT. (Univ. of Pittsburgh)
Director, University Personnel Relations (1963-1965).

BYRD, HAZEL PATRICIA, Ph.D. (University of Florida)
Assistant Professor of Linguistics and Assistant Director of the English Language Institute (1974-1974).

BYRNES, LINDA JOHNSON, M.S. (Florida State University)
Instructor in Communicative Disorders (1971-1971).

BYRON, KENNETH HUGH, Ph.D. (University of Florida)
Associate Professor of English (1961-1970).

BZOCH, KENNETH RUDOLPH, Ph.D. (Northwestern University)
Chairperson and Professor, Department of Communicative Disorders and Speech (1960-1965).

CAFFEE, H. HOLLIS, M.D. (University of Florida)
Assistant Professor of Surgery and Chief of Plastic and Reconstructive Surgery, VAH (1978-1978).

CADE, JAMES R., M.D. (University of Texas)
Professor and Chief of Renal Medicine (1961-1972).

CAILLER, BERNADETTE, Ph.D. (Cornell University)
Assistant Professor of French (1974-1974).

CALDERWOOD, MARON B., V.M.D. (University of Pennsylvania)
Assistant Professor, College of Veterinary Medicine (1977-1977).

CALDWELL, MARY ELLEN, LL. M. (Yale University)
*Professor of Law (1974-1974.)**

CALFEE, DENNIS A., (University of Florida)
Assistant Professor (1975-1977).

CALFEE, LENORA M., M.L.S. (Florida State University)
Assistant Librarian, IFAS (1971-1973).

CALHOUN, ELIZABETH CARVER, M.L.S. (Florida State Univ.)
Assistant Librarian of Education Library (1976-1976).

CALHOUN, FRANK G., Ph.D. (University of Florida)
Associate Professor of Soil Science (Soil Taxonomy) Chief of Party, El Salvador, IFAS (1971-1976).

CALLAHAN, PHILIP S., Ph.D. (Kansas State University)
Professor (Entomologist) IFAS, USDA Insect Attractant Behavior Research Laboratory (1969-1969).

CALLOWAY, PAULINE FRANCES, Ed.D. (North Carolina State)
Associate Professor (Extension District Agent), IFAS, (1968-1974).

CALVERT, DAVID VICTOR, Ph.D. (Iowa State University)
Professor (Soil Chemist) (1962-1976).

CAMERON, DON F., Ph.D. (Medical U. of South Carolina)
Instructor of Anatomy (1976-1976).

CAMPBELL, CARL WALTER, Ph.D. (Purdue University)
Professor (Horticulturist) IFAS, Agricultural Research and Education Center, Homestead (1960-1973).

CAMPBELL, HUGH DANIEL, Ph.D. (Univ. of British Columbia)
*Associate Professor of Nuclear Engineering Sciences (1968-1973).**

CAMPBELL, KENNETH LEONARD, Ph.D. (Iowa State University)
Assistant Professor (Assistant Agricultural Engineer), IFAS (1972-1972).

CANTLIFFE, DANIEL JAMES, Ph.D. (Purdue University)
Associate Professor (Horticulturist), IFAS (1974-1976).

CANTOR, BERNARD, M.D. (University of Rochester)
Assistant Professor in Obstetrics and Gynecology (1975-1975).

CANTRELL, FRED H., B.S.B.A. (University of Florida)
Director of University Relations (1968-1968).

CAPEHART, BARNEY L., Ph.D. (University of Oklahoma)
*Associate Professor of Industrial and Systems Engineering (1968-1973).**

CARANASOS, GEORGE J., M.D. (Johns Hopkins University)
Professor of Medicine and Community Health and Family Medicine and Chief of Ambulant Medicine (1968-1977).

CARDEILHAC, PAUL T., D.V.M. (Texas A & M University)
Professor (Pharmacologist), College of Veterinary Medicine, IFAS (1968-1977).

CARLIN, ANN, J.D. (University of Florida)
Assistant Dean for Academic Affairs (1976-1976).

CARLISLE, VICTOR WALTER, Ph.D. (University of Florida)
Professor of Soil Science (Pedology), IFAS (1947-1974).

CARLOS, JOHN, JR., M.S. (Boston University)
Assistant Professor of Physical Therapy (1977-1977).

CARLOW, ANNA MARIE T., D.D.S. (University of Maryland)
Assistant Professor of Oral Medicine, College of Dentistry (1977-1977).

CARLSON, DAVID ARTHUR, Ph.D. (University of Hawaii)
Assistant Professor (Assistant Entomologist), IFAS, USDA (1973-1973).

CARLSON, GERALD M., Ph.D. (University of Michigan)
Associate Professor, College of Veterinary Medicine and Department of Pharmacology, College of Medicine (1976-1976).

CARLSON, NORMAN GILBERT, B.S.
Asst. Ath. Dir. for Sports Information (1963-1963).

CARNELL, CORBIN SCOTT, Ph.D. (University of Florida)
Professor of English (1958-1976).

CARPENTER, JAMES WOODFORD, Ph.D. (University of Florida)
Professor (Meat Scientist), IFAS (1953-1971).

CARPENTER, WILLIAM JOHN, Ph.D. (Michigan State University)
Professor and Chairperson for Ornamental Horticulture, IFAS (1975-1975).

CARR, ARCHIE FAIRLY, Ph.D. (University of Florida)
*Graduate Research Professor of Zoology and Curator of Zoological Sciences, Florida State Museum (1937-1959).**

CARR, GLENNA DODSON, Ed.D. (University of Florida)
Professor of Education (1952-1977).

CARR, HOWARD L., M.A.
Visiting Assistant Professor of Journalism and Communications (1976-1976).

CARR, THOMAS DEADERICK, Ph.D. (University of Florida)
Professor of Physics, Astronomy and Associate Chairperson of Astronomy (1958-1966).

CARR, WILLIAM C., M.Ed.
Assistant Athletic Director (1972-1976).

CARR, WILLIAM E. S., Ph.D. (Duke University)
Associate Professor of Zoology and Assistant Director of C.V. Whitney Marineland Laboratory (1965-1966).

CARRERA, FRANK, III, M.D. (Emory University)
Associate Professor of Psychiatry (1965-1970).

CARRERAS, VINCENTE, B.S. (St. Louis University)
Assistant in Meteorology, IFAS, NWS, Agricultural Research Center, Lakeland (1974-1974).

CARRIKER, ROY R., Ph.D. (Virginia Poly. Inst. & State Univ.)
Assistant Professor (Rural and Natural Resource Development) Food & Resource Economics, IFAS (1976-1976).

CARROLL, EDWARD ELMER, Ph.D. (University of Pennsylvania)
*Professor of Nuclear Engineering Sciences (1966-1972).**

CARSON, RONALD A., Ph.D. (University of Glasgow, Scotland)
Assistant Professor of Humanities and Community Health and Family Medicine (1975-1975).

CARTER, LAWRENCE, Ph.D. (Florida State University)
Assistant in Rural Development (Extension Rural Development Specialist), FAMU, IFAS (1974-1974).

CARTER, RANDOLPH L., Ph.D. (Iowa State University)
Assistant Professor of Statistics (1976-1976).

CARTER, WILLIAM E., Ph.D. (Columbia University)
Professor of Anthropology (1962-1970).

CASAGRANDE, JEAN, Ph.D. (Indiana University)
Associate Professor of French and Linguistics; Director of Program in Linguistics (1968-1973).

CASSIN, BARBARA C., B.S. (Simmons College)
Assistant Ophthalmologist (1969-1974).

CASSIN, SIDNEY, Ph.D. (University of Texas)
Professor of Physiology (1957-1969).

CASSISI, NICHOLAS J., M.D. (University of Miami)
Professor of Surgery and Chief, Otolaryngology, VAH (1973-1977).

CASTEEL, JAMES DOYLE, Ph.D. (George Peabody College)
Professor of Education (1969-1975).

CASTLE, WILLIAM S., Ph.D. (University of Florida)
Assistant Professor, (Assistant Horticulturist) IFAS, AREC-Lake Alfred (1974-1974).

CATO, BERTHA MAE, M.A. (Indiana State University)
Assistant Professor of Recreation (1976-1976).

CATO, JAMES C., Ph.D. (University of Florida)
Associate Professor (Extension Marine Economist), Food and Resource Economics Department IFAS (1969-1977).

CATON, DONALD, M.D. (Columbia University)
Associate Professor of Obstetrics and Gynecology and Anesthesiology (1969-1974).

CECH, JOHN, Ph.D. (University of Connecticut)
Assistant Professor (1976-1977).

CENZER, DOUGLAS A., Ph.D. (University of Michigan)
Associate Professor of Mathematics (1972-1977).

CENZER, PAMELA S., M.L.S. (University of Michigan)
Assistant Librarian, Acquisitions (1973-1976).

CERDA, JAMES J., M.D. (University of Maryland)
Professor and Associate Director, CRC, Associate Chairman, Professor of Medicine (1972-1976).

CERUTTI, PETER A., M.D., Ph.D. (University of Zurich)
Professor and Chairperson of Biochemistry and Molecular Biology and Director of Biochemistry Programs in the Medical Center (1971-1971).

CHAFIN, MOSES BENTON, M.P.H.
Assistant Professor of Physical Education and Tennis Coach (1964-1968).

CHALMERS, DAVID MARK, Ph.D. (Rochester University)
Professor of History (1955-1967).

CHAMBERS, DERRELL L., Ph.D. (Oregon State University)
Professor of Entomology, USDA, IFAS (1972-1972).

CHAMBLISS, CARROL GENE, Ph.D. (University of Illinois)
Assistant Professor of Agronomy, IFAS, Agricultural Research and Education Center, Bradenton (1976-1976).

CHAMEIDES, WILLIAM L., Ph.D. (Yale University)
Assistant Professor of Physics and Atmospheric Sciences (1976-1976).

CHAMPION, JOHN MILLS, Ph.D. (Purdue University)
Chairman and Professor of Health and Hospital Administration; Professor Management (1964-1969).

CHANCE, JEAN C., M.A.
Associate Professor of Journalism and Communications (1969-1977).

CHANG, RICHARD TAIWON, Ph.D. (University of Michigan)
Professor of History (1966-1975).

CHAPMAN, HERBERT LEE, JR., Ph.D. (Iowa State University)
Professor (Animal Nutritionist) and Center Director, Agricultural Research Center, ONA IFAS (1951-1965).

CHAPMAN, SHARON K., Ph.D. (University of Florida)
Assistant Professor of Pharmacology and Therapeutics (1972-1972).

CHAPMAN, WILLIS HARLESTON, M.S. (North Carolina State)
Professor (Agronomist) and Center Director, IFAS, Agricultural Research and Education Center, Quincy (1942-1959).

CHARUDATTAN, RAGHAVEN, Ph.D. (University of Madres)
Assistant Professor in Plant Pathology, IFAS (1970-1973).

CHEEK, JIMMY GEARY, Ph.D. (Texas A&M University)
Assistant Professor, Agricultural Extension Education, IFAS (1975-1975).

CHELLEMI, S. JOHN, D.D.S. (University of Pennsylvania)
Professor of Oral Medicine, College of Dentistry (1970-1975).

CHEN, CHAO L., D.V.M. (National Taiwan University)
Ph.D. (Michigan State University)
Associate Professor, College of Veterinary Medicine (1976-1976).

CHEN, KWAN-YU, Ph.D. (University of Pennsylvania)
Professor of Astronomy and Physical Sciences (1963-1977).

CHEN, SU-SHING, Ph.D. (University of Maryland)
Associate Professor of Mathematics (1970-1975).

CHEN, WAYNE, H., Ph.D. (University of Washington)
Dean of the College of Engineering; Director of the Engineering and Industrial Experiment Station; Professor of Electrical Engineering (1952-1973).

CHENETTE, EUGENE R., Ph.D. (University of Minnesota)
Professor of Electrical Engineering (1966-1966).

CHERRY, R. H., Ph.D. (University of Illinois)
Assistant Research Scientist, IFAS Agricultural Research and Education Center, Ft. Lauderdale (1976-1976).

CHESTNUT, CYNTHIA MARIE, M.S. (Florida State University)
Instructor of Speech (1974-1974).

CHEVES, FOREST A., M.S.
Associate in Chemistry (1961-1970).

CHEW, VICTOR, B.Sc.(H.) (University of Western Australia)
Associate Professor (Associate Statistician), USDA, IFAS (1955-1973).

CHILDERS, CARL CALVIN, Ph.D. (University of Missouri)
Assistant Professor (Assistant Entomologist), IFAS Agricultural Research and Education Center, Lake Alfred (1977-1977).

CHILDERS, DONALD GENE, Ph.D. (University of Southern California)
Professor of Electrical Engineering and Acting Chairperson of the Department (1963-1968).

CHILDERS, RICHARD C., M.S. (University of Rochester)
Assistant Professor, Department of Medicine (1974-1974).

CHILDERS, WILLIAM COLE, Ph.D. (University of Florida)
*Professor of English (1959-1969).**

CHIOU, GEORGE C. Y., Ph.D. (Vanderbilt University)
Professor of Pharmacology and Therapeutics (1969-1977).

CHIRAS, GLORIA, M.S.N. (The Catholic University of America)
Assistant Professor, College of Nursing (1977-1977).

CHIU, TSAO-YI, Ph.D. (University of Florida)
Associate Professor of Coastal and Oceanographic Engineering (1973-1973).

CHOATE, RUSH EDGAR, M.S.A. (University of Florida)
Professor (Agricultural Engineer), IFAS (1947-1959).

CHRISMAN, CHERYL L., D.V.M. (Michigan State University)
Associate Professor, College of Veterinary Medicine (1977-1977).

CHRISTENSEN, BENT AKSEL, Ph.D. (University of Minnesota)
Professor of Civil Engineering (1963-1965).

CHRISTIAN, MILTON BURKE, M.Ed.
Assistant Professor of Behavioral Studies (1964-1970).

CHRISTIANSEN, KENNETH A., Ed.D. (University of Missouri)
Professor of Journalism and Communications, Chairperson, Department of Broadcasting (1959-1972).

CHRISTIE, LEONARD G., M.D. (Temple University School of Medicine)
Assistant Professor of Medicine (1976-1976).

CHRISTMAS, ROBERT BRUCE, Ph.D. (University of Florida)
Associate Professor in Poultry Science, IFAS (1960-1977).

CH'U, CHAUNCEY CHENG-HSI, Ph.D. (University of Texas)
Associate Professor of Chinese and Linguistics (1969-1974).

CHUN, PAUL W., Ph.D. (University of Missouri)
Associate Professor of Biochemistry and Molecular Biology (1967-1970).

CHURCHHILL, JAMES T., B.A. (University of Florida)
Visiting Teacher, P. K. Yonge (1975-1977).

CIEPLINSKI, LOUETTA KIDD, B.S. (University of Florida)
Visiting Instructor of Physical Therapy (1976-1976).

CIEZKOWSKI, JOE, B.S.P.
Associate in Pharmacy (1976-1976).

CILLEY, MARY L., M.A. (University of Florida)
Assistant Professor (Assistant Editor), IFAS, (1961-1962).

CLARK, ANTHONY JAMES, Ph.D. (Denver University)
Associate Professor of Speech (1969-1974).

CLARK, ARTHUR E., JR., Ph.D. (Univ. of Florida)
Assistant Professor of Dental Biomaterials College of Dentistry (1975-1975).

CLARK, EDWARD BOWIE, JR., Ed.S. (University of Florida)*
Assistant Professor of Education (1966-1971).

CLARK, HAROLD BROWN, Ph.D. (University of Kentucky)
*Professor, Food and Resource Economics Department, IFAS (1958-1958).**

CLARK, IRA GRANVILLE, Ph.D. (Northwestern University)
Associate Professor of English (1972-1972).

CLARK, PHILLIP A., Ed.D. (Western Michigan University)
Associate Professor of Education (1972-1975).

CLARK, T. DWYGHT, D.D.S. (Emory University)
Assistant Professor of Operative Dentistry, College of Dentistry (1976-1976).

CLARK, WILLIAM B. IV, D.D.S. (Emory University)
Assistant Professor of Basic Dental Sciences, College of Dentistry (1977-1977).

CLARKSON, MARK HALL, Ph.D. (University of Texas)
*Professor of Engineering Sciences (1961-1961).**

CLAYTON, JOE EDWARD, M.S. (Clemson)
Associate Professor (Associate Agricultural Engineer) IFAS, Agricultural Research & Education Center, Belle Glade (1965-1965).

CLAYTON, KENNETH C., Ph.D. (Purdue University)
Assistant Professor, Food and Resource Economics, IFAS (1975-1975).

CLEM, LESTER WILLIAM, Ph.D. (University of Miami)
Professor of Immunology and Medical Microbiology, College of Medicine, and Professor of Microbiology and Cell Science, IFAS (1966-1971).

CLINE, L. ELIZABETH, Ed.S. (University of Florida)
Residence Life Coordinator, Student Housing (1976-1976).

CLORE, FOREST C., M.D. (University of Michigan)
Associate Professor and Chief of Diagnostic Radiology, VAH (1967-1976).

CLOSSON, DAVID L., Ph.D. (University of Pennsylvania)
Assistant Professor of English (1977-1977).

CLUBOK, ALFRED B., Ph.D. (University of Michigan)
Professor and Chairperson of Political Science (1958-1977).

CLUNN, PATRICIA A., Ed.D. (Columbia Univ.)
Assistant Professor, College of Nursing (1975-1975).

COBB, BARBARA A., M.N. (University of Florida)
*Program Director, Level I, and Assistant Professor College of Nursing (1971-1974).**

COFFELT, JAMES A., Ph.D. (University of Wisconsin)
Assistant Professor of Entomology, USDA, IFAS (1971-1971).

COGGINS, WILMER, J., M.D. (Duke University)
Professor of Community Health and Family Medicine (1975-1977).

COHN, STUART R., LL.B. (Yale)
Associate Professor of Law (1977-1977).

COHEN, HOWARD LIONEL, Ph.D. (University of Indiana)
Associate Professor of Physical Sciences and Astronomy (1968-1973).

COHEN, JOEL B., Ph.D. (University of California at Los Angeles)
Professor of Marketing and Chairman of Department of Marketing (1974-1974).

COHEN, LOUIS DAVID, Ph.D. (Duke University)
Professor of Clinical Psychology; Professor of Psychology (1962-1962).

COHEN, MORTIMER, Ph.D. (University of Minnesota)
Professor (Plant Pathologist), IFAS Agricultural Research Center, Ft. Pierce (1956-1968).

COHEN, ROBERT J., Ph.D. (Yale University)
Associate Professor of Biochemistry and Molecular Biology (1971-1976).

COLAIZZI, FRANK A., D.M.D. (University of Pittsburgh)
Associate Professor of Removable Prosthodontics, College of Dentistry (1977-1977).

COLBURN, DAVID RICHARD, Ph.D. (University of North Carolina)
Associate Professor of Social Sciences and History, (1972-1977).

COLE, MAURICE F., Ph.D. (North Carolina State University)
Associate Professor (Extension District Agent) IFAS (1977-1977).
Associate Professor (Extension District Agent) IFAS (1977-1977).

COLE, THOMAS WINSTON, Ed.D. (University of Texas)
Dean of Academic Affairs for Instructional Services and Professor of Educational Administration (1971-1972).

COLETTE, WILLIAM A., Ph.D. (Iowa State University)
Assistant Professor (Assistant Agricultural Economist), IFAS (1975-1975).

COLGATE, SAMUEL ORAN, Ph.D. (Massachusetts Institute of Technology)
Associate Professor of Chemistry (1959-1966).

COLLANTE, ERLINDA Y., M.D. (Far Eastern University)
University Physician (1975-1975)

COLLE, DOUGLAS EDWARD, M.S. (Texas A & M University)
Assistant in Fisheries, IFAS (1974-1974).

COLLETT, WILLIAM K., D.D.S., M.S. (University of Pittsburgh)
Associate Dean and Professor of Oral Medicine, College of Dentistry (1968-1974).

COLLIER, COURTLAND A., M.E. (University of Florida)
Associate Professor of Civil Engineering (1961-1976).

COLLIER, ROBERT J., Ph.D. (University of Illinois)
Assistant Professor (Animal Physiologist), IFAS (1976-1976).

COLLINS, DOROTHY E., A.C.S.W. (University of Chicago)
Associate Professor of Social Work in Psychiatry (1966-1977).

COLLINS, WILLIAM A., Ph.D. (University of Washington) C.P.A. (Florida)
Assistant Professor of Accounting (1973-1973).

COMBS, CHRISTOPHER L., M.S. (Florida State University)
Assistant in Marine Biology, IFAS (1976-1976).

COMBS, GEORGE ERNEST, Ph.D. (Iowa State University)
*Professor (Animal Nutritionist) IFAS (1951-1967).**

CONETTA, DONALD A., M.D. (Duke University)
Instructor of Medicine (1977-1977).

CONKLIN, JAMES BYRON, JR., Sc.D. (MIT)
Director, Circa and Associate Professor of Physics (1964-1974).

CONLON, SUSAN L., Ph.D. (Florida State University)
Assistant Professor of Statistics (1977-1977).

CONNELL, RICHARD GRANT, Ph.D. (University of Florida)
Assistant Professor in Materials Science and Engineering (1973-1975).

CONNER, H. HENRY, M.A.
Assistant Professor of Journalism and Communications, Producer-Director, Television Station WUFT (1966-1973).

CONNER, J. WAYNE, Ph.D. (Princeton University)
Distinguished Service Professor of Romance Languages, and Chairperson of the Department (1962-1977).

CONNER, TOTSYE JOHNSON, M.Ed. (University of Georgia)
Instructor, P. K. Yonge Laboratory School (1968-1972).

CONNOLLY, JOHN W. D., Ph.D. (University of Florida)
Professor of Physics (1970-1976).

CONNOLLY, MICHAEL B., Ph.D. (University of Chicago)
Professor of Economics (1972-1976).

CONOVER, CHARLES ALBERT, Ph.D. (University of Georgia)
Professor (Ornamental Horticulturist), and Center Director, Agricultural Research and Education Center, Apopka (1963-1974).

CONOVER, ROBERT ARMINE, Ph.D. (University of Illinois)
Professor (Plant Pathologist), IFAS, Agricultural Research and Education Center, Homestead (1947-1975).

CONRAD, JOSEPH HENRY, Ph.D. (Purdue University)
Professor (Animal Nutritionist), Tropical Animal Science, IFAS (1971-1971).

CONRADT, DAVID PAUL, Ph.D. (Brown University)
Associate Professor of Political Science (1968-1973).

CONROY, STEPHEN S., Ph.D. (University of Iowa)
*Chairman of American Studies and Associate Professor of Afro-American Studies (1960-1969).**

CONTI, ANTHONY J., D.M.D. (New Jersey College of Dentistry), M.P.H. (University of North Carolina)
Associate Professor of Community Dentistry, College of Dentistry, (1971-1976).

CONTI, C. RICHARD, M.D. (Johns Hopkins University)
Professor and Chief of Cardiology, VAH (1974-1974).

COOK, ALLYN AUSTIN, Ph.D. (University of Wisconsin)
Professor (Plant Pathologist), IFAS (1954-1967).

COONS, WILLIAM WARWICK, M.B.A. (George Washington Univ.)
Associatte Engineer of Civil Engineering (1976-1976).

COPELIN, JOHNNY LANDON, Ph.D. (Texas Tech University)
Assistant Professor (Animal Nutritionist), IFAS (1976-1976).

COPPOCK, GLENN E., M.S. (Oklahoma State University)
Adjunct Professor (Agricultural Engineer), IFAS, DC, AREC-Lake Alfred (1958-1968).

CORAM, WILMER THOMAS, JR., M.A.E. (University of Florida)
Coordinator, Department of Extended Services, Division of Continuing Education (1957-1969).

CORBETT, WELLESLEY T JR., E.D D. (University of Florida)
Assistant Professor, P. K. Yonge (1972-1976).

CORNELIUS, CHARLES E., D.V.M., Ph.D. (Univ. of Cal. at Davis)
Dean, College of Veterinary Medicine, Chairman, Department of Veterinary Science, Professor of Pathology and Medicine (1971-1973).

CORNELIUS, WILLIAM G., Ph.D. (University of Minnesota)
Assistant Professor of Management & Director of M B.A. Program (1972-1972).

CORNELL, JOHN ANDREW, Ph.D. (Virginia Polytechnic Institute)
Associate Professor (Associate Statistican), IFAS (1968-1973).

COSCIA, FRANK A., D.D.S. (Georgetown University)
Assistant Professor of Oral Medicine, College of Dentistry (1977-1977).

COUCH, LEON WORTHINGTON, II, Ph.D. (University of Florida)
Associate Professor of Electrical Engineering (1967-1974).

COUCH, MARGARET W., Ph.D. (University of Florida)
Assistant Research Professor, Radiation Chemistry, VAH (1969-1971).

COULSON, GRACIELA B., Ph.D. (Washington Univ., St. Louis)
Associate Professor of Spanish (1974-1977).

COULTAS, CHARLES LYNN, Ph.D. (University of Minnesota)
Associate Professor of Soil Science (FAMU), IFAS (1973-1973).

COUNTS, FRANK S., M.S.
Assistant Professor of Journalism and Communications, Producer-Director, Television Station WUFT (1972-1975).

COURAGE, KENNETH GRANT, MSCE (Texas A & M University)
Associate Professor of Civil Engineering (1971-1976).

COURAGE, MYRNA, M.N. (University of Florida)
Visiting Assistant Professor College of Nursing (1976-1976).

COVEY, CHARLES DEAN, Ph.D. (Louisiana State University)
Professor, Food and Resource Economics Department, IFAS (1957-1967).

COX, MERLIN GWINN, Ph.D. (University of Florida)
*Associate Professor of Social Sciences and History, Adviser (1955-1966).**

CRAIN, EDWARD E., M.A. (University of Miami)
Associate Professor of Architecture and Director of Undergraduate Instruction (1973-1973).

CRALL, JAMES MONROE, Ph.D. (University of Missouri)
Professor (Plant Pathologist), IFAS Agricultural Research and Education Center, Leesburg (1952-1954).

CRANDALL, CATHERINE A., Ph.D. (Purdue University)
Associate Professor of Pathology (1960-1977).

CRANDALL, LEE A., Ph.D. (Purdue University)
Assistant Professor of Community Health and Family Medicine (1976-1977).

CRANDALL, PHILLIP G., Ph.D. (Purdue University)
Assistant Professor (Assistant Food Scientist), IFAS, AREC-Lake Alfred (1975-1975).

CRANDALL, RICHARD B., Ph.D. (Purdue University)
Professor of Immunology and Medical Microbiology (1960-1974).

CRANE, STEPHEN W., D.V.M. (U. of California at Davis)
Assistant Professor, College of Veterinary Medicine (1977-1977).

CRANNEY, ADELBERT GARR, JR., Ph.D. (University of Minnesota)
Associate Professor of English and Education, (1966-1969).

CRAVEN, ROY C., JR., M.F.A.
*Director, University Gallery; Professor of Art (1954-1967).**

CRAVENS, SALLY ANN, M.A.
Librarian, Documents (1967-1976).

CRAWFORD, BEN H., Ph.D. (University of Kentucky)
Assistant Professor (Assistant Animal Scientist) Animal Science, IFAS (1973-1973).

CREEL, AUSTIN BOWMAN, Ph.D. (Yale University)
*Professor of Religion and Chairperson of Department (1957-1977).**

CREVASSE, LAMAR E., M.D. (Duke University)
Professor of Medicine and Assistant Dean for Continuing Medical Education (1959-1969).

CREWS, CLIFTON E., JR., Ph.D. (University of Georgia)
Assistant Professor of Fruit Crops (1976-1976).

CREWS, HARRY EUGENE, M.E.D. (University of Florida)
Professor of English (1968-1976).

CREWS, RUTHELLEN, Ed.D. (Columbia University)
Professor of Education (1966-1972).

CRIBBETT, ALBERT F., M.S.A. (University of Florida)
Director of Special Programs and Assistant Professor of Agricultural Economics, IFAS (1954-1967).

CRIPE, WYLAND S., D.V.M. (University of California-Davis)
Associate Professor & Assistant Dean for Public Services, College of Veterinary Medicine (1972-1974).

CRISMAN, THOMAS L., Ph.D. (Indiana University)
Assistant Professor of Environmental Engineering Sciences (1977-1977).

CRISTESCU, NICOLAE, DMP. (University of Bucharest)
Graduate Research Professor of Engineering Sciences (1970-1970).

CROCKER, LINDA M., Ph.D. (Michigan State University)
Associate Professor of Education (1974-1977).

CROCKER, TIMOTHY EUGENE, Ph.D. (Michigan State University)
Associate Professor of Fruit Crops (Extension Horticulturist), IFAS, (1970-1975).

CROCKETT, JOE RICHARD, Ph.D. (University of Florida)
Associate Professor (Associate Animal Geneticist), IFAS, Agricultural Research Center, Belle Glade (1960-1969).

CROMROY, HARVEY L., Ph.D. (North Carolina State University)
Professor of Entomology, IFAS (1974-1975).

CROMWELL, RICHARD PARK, M.E. (University of Florida)
Associate Professor (Associate Agricultural Engineer). IFAS, (1967-1977).

CRONE, ERNEST G., M.Ed. (University of North Carolina)
Assistant Professor of Health Education and Safety (1957-1963).

CROOK, FRANCES M., B.S.B.A. (Univ. of Florida)
Associate Director of Personnel (1960-1976).

CROSBY, FLOYD R., JR., B.S.B.A. (Univ. of Florida)
Systems Coordinator (1962-1975).

CROSLAND, ROBERT ELDER, M.A. Arch., (University of Florida)
Professor of Building Construction (1971-1976).

CROSS, CLARK IRWIN, Ph.D. (University of Washington)
Associate Professor of Geography and Physical Sciences and Acting Chairperson of the Department of Geography (1949-1975).

CROWLEY, PATRICIA MAE, M.A.
Assistant Librarian, J. Hillis Miller Health Center Library (1974-1974).

CRUM, ROY LEE, Ph.D. (University of Texas at Austin)
Assistant Professor of Finance (1974-1974).

CRUMMER, ARTHUR ALLEN, Ph.D. (University of Florida)
Visiting Instructor of Mathematics (1971-1971).

CRUMP, MARTHA L., Ph.D. (University of Kansas)
Assistant Professor of Zoology (1976-1976).

CRUZ, AMELIA C., M.D. (Far Eastern University)
Assistant Professor of Obstetrics and Gynecology (1973-1975).

CSIZINSZKY, ALEXANDER A., Ph.D. (Washington State Univ.)
Assistant Professor (Assistant Horticulturist), IFAS, Agricultural Research and Education Center, Bradenton (1976-1976).

CULLEN, STANLEY I., M.D. (University of Miami)
Associate Professor in Medicine (1969-1969).

CUNNINGHAM HUGH W., (University of Missouri)
Director of Information Services, Assistant to the President Journalism (1955-1973).

CUNNINGHAM, WALTER R., Ph.D. (University of Southern California)
Assistant Professor of Psychology, Gerontology, and Clinical Psychology (1974-1974).

CURRAN, ROBERT LYNN, Ed.D. (Harvard University)
Professor of Education (1952-1969).

CURREY, WAYNE LEE, Ph.D. (University of Connecticut)
Associate Professor of Agronomy, IFAS (1970-1975).

CURRIER, BARRY A., J.D. (University of Southern California)
Associate Professor of Law (1977-1977).

CURRY, R. CHARLES, JR., M.D. (University of Florida)
Assistant Professor of Medicine, VAH (1974-1974).

CURRY, ROBERT WHIT, M.D. (Duke University)
Assistant Professor of Community Health and Family Medicine (1977-1977).

CURTIS, CLAYTON C., Ph.D. (University of Indiana)
Associate Professor of Real Estate and Urban Analysis (1958-1961).

CURTIS, ROBERT L., M.P.A.
Assistant in Pharmacy and Assistant to the Dean (1975-1975).

CUSHINSKY, H. MICHAEL, A.M. (University of Pennsylvania)
Interim-Assistant Professor of Insurance and Economics (1976-1976).

DALE, MARTHA S., M.Ag. (University of Florida)
Visiting Instructor of Clinical and Community Dietetics (1976-1976).

DALSHFIMER, BARBARA CORINNE, M.P.H. (University of Florida)
Instructor, P. K. Yonge Laboratory School (1954-1960).

DALTON, GEORGE RONALD, Ph.D. (University of Michigan)
Professor of Nuclear Engineering Sciences (1959-1968).•

DALY, JAMES W., M.D. (Loyola University)
Professor of Obstetrics and Gynecology and Head of Oncology (1968-1977).

DAME, D. A., Ph.D. (University of Massachusetts)
Associate Professor of Entomology, USDA, IFAS (1970-1975).

DAMICO, ALFONSO J., Ph.D. (Ohio State University)
Associate Professor of Political Science (1969-1975).

D'AMICO, ROBERT, Ph.D. (State University of New York at Buffalo)
Assistant Professor of Philosophy (1974-1974).

DAMICO, SANDRA, Ph.D. (University of Florida)
Associate Professor of Behavioral Studies and Social Foundations of Education (1969-1977).

DAMRON, BOBBY LEON, Ph.D. (University of Florida)
Associate Professor and Associate Nutritionist, IFAS, (1966-1974).

DANIELS, A. W., M.Ed. (University of Florida)
Instructor and Assoc. Director, Office of Instructional Resources (1971-1971).

DANTZMAN, CHARLES LEONARD, Ph.D. (University of Florida)
Assistant Professor (Assistant Soils Chemist), IFAS, Agricultural Research Center, ONA (1959-1960).

DARBY, JOHN F., Ph.D. (University of Wisconsin)
Professor (Plant Pathologist) and Center Director, IFAS, Agricultural Research and Educational Center, Sanford (1951-1966).

DASTA, ANTHONY JOSEPH, M.S. (University of Illinois)
Associate Professor of Architecture (1966-1975).

DAUER, MANNING JULIAN, Ph.D. (University of Illinois) Litt.D. (University of West Florida)
Distinguished Service Professor of Political Science (1933-1972).•

DAVENPORT, JOHN YOUNG, (Med. Univ. of South Carolina)
Assistant Professor of Community Health and Family Medicine, JHEP (1977-1977).

DAVENPORT, THOMAS LEE, Ph.D. (Texas A & M University)
Assistant Professor (Assistant Plant Physiologist), IFAS Agricultural Research and Education Center, Homestead (1977-1977).

DAVIDSON, JAMES MELVIN, Ph.D. (University of California, Davis)
Professor (Soil Physicist), IFAS, (1974-1974).

DAVIDSON, JOHN LEITCH, Ph.D. (Purdue University)
Associate Professor of Civil Engineering (1972-1977).

DAVIDSON, LEONARD M., Ph.D. (MIT)
Assistant Professor of Management (1973-1973).

DAVIS, ALBERT JOHN, M.Arch. (Va. Tech. University)
Assistant Professor of Architecture (1975-1975).

DAVIS, BILLY HAMPTON, Ed.D. (University of Florida)
Assistant Professor of Behavioral Studies, Adviser (1970-1971).

DAVIS, CARLTON GEORGE, Ph.D. (Michigan State University)
Associate Professor, Food and Resource Economics Department, IFAS (1970-1975).

DAVIS, DEAN FREDERICK, M.S. (University of Tennessee)
Professor (Entomologist), USDA, IFAS (1973-1974).

DAVIS, EDWARD W., JR., Ph.D. (University of Illinois)
Associate Professor of Electrical Engineering and Computer and Information Sciences (1976-1976).

DAVIS, FRANCIS C., JR., Ph.D. (University of Tennessee)
Associate Professor, Microbiology and Cell Science, IFAS (1971-1971).

DAVIS, GEORGE KELSO, Ph.D. (Cornell University)
Professor of Animal Science and Animal Nutritionist (1942-1970).

DAVIS, HORACE GIBBS, JR., M.A.
Distinguished Service Professor of Journalism and Communications (1954-1977).

DAVIS, HUGH CHESTER, JR., Ph.D. (University of Tennessee)
Professor of Clinical Psychology and Psychology (1960-1970).

DAVIS, JAMES R., M.Ed. (University of Florida)
Major, U.S. Marine Corps, Assistant Professor of Naval Science (1972-1972).

DAVIS, JAMES RONNIE, Ph.D. (University of Virginia)
Professor of Economics (1971-1974).

DAVIS, JOSEPH STEVEN, Ph.D. (University of Iowa)
Professor of Botany, Arts and Sciences (1966-1977).

DAVIS, JOY H., M.Ed. (University Florida)
Assistant Professor, College of Nursing (1975-1975).

DAVIS, R. HUNT, JR., Ph.D. (University of Wisconsin)
Associate Professor of History (1967-1976).

DAVIS, ROBERT W., Ph.D. (University of Florida)
Assistant Professor of Physical Sciences (1971-1972).

DAWSON, WILLIAM W., Ph.D. (Florida State University)
Professor of Ophthalmology, Physiology, Psychology and Neuroscience (1965-1969).

DAY, JANE ANN, M.A. (University of Alabama)
Visiting Assistant Professor of Physical Therapy (1977-1977).

DAYS, J. RONNIE, Ph.D. (University of Virginia)
Professor of Economics (1967-1971).

DEAKIN, MOTLEY FREMONT, Ph.D. (Univ. of Calif. at Berkeley)
Associate Professor of English and Associate Chairperson of the Department of English (1962-1967).

DEAKTOR, DARRYL B., J.D. (University of Pennsylvania)
Associate Professor of Law (1972-1974).

DEAL, WILLIAM B., M.D. (University of North Carolina)
Acting Dean, Professor of Medicine, Community Health and Family Medicine and Pharmacy (1964-1977).

DEAN, CHARLES EDGAR, Ph.D. (North Carolina State Univ.)
Professor (Agronomist) (Agronomy Department), IFAS (1959-1969).

DEAN, JACK L., Ph.D.
Associate Professor (Plant Pathologist), USDA, IFAS (1971-1971).

DEAN, NANCY E., M.Ed. (University of Florida)
Teacher, P. K. Yonge Laboratory School (1973-1973).

DEARMIN, LINDA L., M.S. (University of Tennessee)
Associate Professor (Extension 4H-Youth Specialist), IFAS (1970-1975).

DEBUSK, FRANKLIN L., M.D. (Johns Hopkins University)
Professor of Pediatrics and Director of Pediatric Clinic (1966-1973).

DEEVEY, EDWARD S., JR., Ph.D. (Yale University)
Graduate Research Curator, Florida State Museum and Joint Graduate Research Professor of Zoology, Botany, Geology and Latin American Studies (1971-1971).

DEEVEY, GEORGIANA B., Ph.D. (Yale University)
Associate in Research, Florida State Museum and Visiting Adjunct Professor of Zoology (1971-1975).

DEFUNIAK, H. R., M.S.
Librarian and Chairperson of Circulation (1966-1976).

DEGNER, ROBERT L., Ph.D. (Texas A & M University)
Assistant Professor and Research Economist, Food and Resource Economics Department, IFAS (1976-1976).

DEHOFF, ROBERT THOMAS, Ph.D. (Carnegie - Mellon University)
Professor of Materials Science and Engineering (1959-1970).

DELGROSSO, ROBERT A., M.A. (Michigan State University)
Interim Assistant Professor of Political Science (1977-1977).

DELONY, DEXTER, L.L.M. (Harvard University)
Professor of Law (1948-1951).

DE LOS SANTOS, ANTHONY E., M.S.
*Assistant Professor of Journalism and Communications (1970-1973).**

DENG, JUENCHIN, Ph.D. (University of Georgia)
Assistant Professor (Seafood Technologist), IFAS, (1974-1974).

DENMARK, HAROLD ANDERSON, M.S. (University of Florida)
Professor (Entomologist) DPI, IFAS (1966-1966).

DENNISON, RAYMOND ALEXANDER, Ph.D. (University of Iowa)
Professor (Food Scientist) and Chairperson, Food Science Department, IFAS (1945-1956).

DENSLOW, DAVID ALBERT, Ph.D. (Yale)
*Associate Professor of Economics (1970-1975).**

DENSON, ROBERT J., M.S.
Assistant Dean and Director, Student Judicial Affairs and Outreach Programs (1973-1977).

DENTON, WILLIAM HERSHALL, Ph.D. (Purdue University)
Assistant Professor (Assistant Entomologist), IFAS, Agricultural Research and Education Center, Sanford (1973-1973).

DEPADUA, CONSTANTE B., M.D. (University of the Philippines)
Associate Professor of Anesthesiology (1967-1974).

DER-HOUSSIKIAN, HAIG, Ph.D. (University of Texas)
Professor of Foreign Languages and Linguistics; Director of the Center for African Studies (1967-1977).

DERRICK, CLARENCE, Ph.D. (University of Chicago)
Professor of Humanities (1953-1962).

DETURE, FRANCIS A., M.D. (University of Florida)
Assistant Professor of Surgery and Chief of Urology, VAH (1977-1977).

DETWETLER, JOHN S., Ed.D. (University of Florida)
Associate Professor of Journalism and Communications (1965-1974).

DEW, DONALD, Ph.D. (University of Iowa)
Professor of Speech (1963-1977).

DEWITT, ROBERT M., Ph.D. (University of Michigan)
Associate Professor and Vice Chairperson, Department of Zoology (1954-1975).

DEWSBURY, DONALD ALLEN, Ph.D. (University of Michigan)
Professor of Psychology (1966-1973).

DEYRUP, JAMES A., Ph.D. (University of Illinois)
Assistant Dean, Preprofessional Education, Colleges of Medicine and Dentistry and Professor of Chemistry (1965-1974).

DHANDE, SANJAY GOVIND, Ph.D. (Indian Institute of Technology)
Visiting Assistant Professor of Mechanical Engineering (1977-1977).

DIAZ, NILS JUAN, Ph.D. (University of Florida)
Associate Professor of Nuclear Engineering Sciences (1969-1974).

DICKEY, DOUG, B.S. (University of Florida)
Head Football Coach (1969-1969).

DICKINSON, JOSHUA CLIFTON, JR., Ph.D. (University of Florida)
Director and Curator of Ornithology, Florida State Museum, and Joint Professor of Zoology (1946-1973).

DICKSON, DONALD WARD, Ph.D. (North Carolina State)
Associate Professor in Entomology, IFAS (1968-1968).

DICKISON, SHEILA K., Ph.D. (Bryn Mawr College)
Associate Professor of Classics (1976-1976).

DIETRICH, FRANK H., II, Ph.D. (University of Florida)
Assistant Professor of Statistics (1975-1975).

DILLER, GEORGE T., Ph.D. (Stanford University)
Associate Professor of French (1968-1973).

DINCULEANU, NICOLAE, Ph.D. (University of Bucharest)
Professor of Mathematics (1977-1977).

DINNING, JAMES S., Ph.D. (Oklahoma State University)
Assistant Research Scientist, IFAS (1976-1976).

DIRECTOR, KENNETH L., M.D. (Albany Medical College)
Assistant Professor, VAH (1976-1976).

DIRECTOR, STEPHEN WILLIAM, Ph.D. (University of California)
Professor of Electrical Engineering (1968-1974).

DIXON, J. C., Ph.D. (University of North Carolina)
Professor of Psychology (1949-1956).

DOCKERY, J. LEE, M.D. (University of Arkansas)
Associate Professor of Obstetrics and Gynecology (1975-1975).

DODDINGTON, HAROLD WILLIAM, Ph.D. (University of Florida)
Associate Engineer in Engineering Sciences (1974-1976).

DOERING, PAUL LOUIS, M.S.P. (University of Florida)
Assistant Professor of Pharmacy (1976-1976).

DOHERTY, HERBERT JOSEPH, Ph.D. (Univ. of North Carolina)
*Professor of History and Social Sciences and Chairperson of Social Sciences (1949-1964).**

DOLBIER, WILLIAM READ, JR., Ph.D. (Cornell University)
Professor of Chemistry (1966-1975).

DOMINIAK, KENNETH E., Ph.D. (Polytechnic Institute of Brooklyn)
Associate Professor of Industrial and Systems Engineering and Electrical Engineering, Eglin-AFB (1970-1972).

DONELIN, DANIEL WILLIAM, M.L.A. (Michigan State University)
Associate Professor of Landscape Architecture (1970-1976).

DONIVAN, FRANK FORBES, JR., Ph.D. (University of Florida)
Associate Professor of Physical Sciences and Astronomy (1970-1977).

DONNELLY, WILLIAM H., M.D. (University of Ottawa, Canada)
Associate Professor of Pathology and Pediatrics (1971-1976).

DONSELMAN, H. M., Ph.D. (Purdue University)
Assistant Professor (Extension Ornamental Horticulturist), IFAS Agricultural Research and Education Center, Ft. Lauderdale (1976-1976).

DORMAN, P. E., Ed.D. (State University of New York)
Associate Professor of Music (1971-1971).

DOTY, KEITH LONNIE, Ph.D. (University of California)
Associate Professor of Electrical Engineering (1968-1973).

DOUGAN, THOMAS R., M.S.
Assistant Dean for Student Services (1977-1977).

DOUGHERTY, DAVID EDWARD, Ph.D. (University of Georgia)
Assistant Professor (Assistant Plant Pathologist), IFAS Agricultural Research and Education Center, Immokalee (1977-1977).

DOUGHERTY, MARSHALL HARDING, B.S.
Adjunct Assistant Professor (Assistant Chemical Engineer), IFAS, DC, AREC-Lake Alfred (1952-1957).

DOUGHERTY, MOLLY CROCKER, Ph.D. (University of Florida)
Associate Professor, College of Nursing (1973-1973).

DOUGHTY, PAUL L., Ph.D. (Cornell University)
Professor of Anthropology (1971-1971).

DOUGLAS, CARROLL REECE, Ph.D. (University of Tennessee)
Associate Professor (Associate Extension Poultryman), IFAS (1969-1973).

DOUGLAS, MICHAEL E., M.D. (University of Arizona)
Assistant Professor of Anesthesiology (1976-1976).

DOVE, DEREK B., Ph.D. (London University)
Professor of Materials Science and Engineering; Professor of Electrical Engineering (1967-1971).

DOW, J. KAMAL, Ph.D. (University of Missouri)
Associate Professor (Assoc. Ag. Econ.), IFAS (1968-1973).

DOWELL, R. V., Ph.D. (Ohio State)
Assistant Research Scientist, IFAS, Ft Lauderdale (1976-1976).

DOWNIE, RICHARD D., Ph.D. (Michigan State University)
Assistant Dean, International Student Services (1976-1976).

DOWNS, JOHN B., M.D. (University of Florida)
Associate Professor of Anesthesiology and Surgery, VAH (1975-1977).

DRAKE, DAVID ALLYN, Ph.D. (Syracuse University)
Associate Professor of Mathematics (1968-1973).

DRAPER, JAMES ARTHUR, Ph.D. (University of Washington)
Assistant Professor of Mathematics (1972-1973).

DRESDNER, RICHARD DAVID, Ph.D. (Pennsylvania State University)
Professor of Chemistry (1953-1966).

DROST, MAARTEN, D.V.M. (Iowa State)
Professor, College of Veterinary Medicine (1977-1977).

DRUM, CAROL ANN, M.L.S.
Associate Librarian in Charge of Chemistry Library (1972-1977).

DRUMMOND, BOYCE A., Ph.D. (University of Florida)
Visiting Adjunct Assistant Professor of Zoology (1976-1976).

DRUMMOND, WILLIAM H., Ed.D (Stanford University)
Professor of Education (1972-1972).

DRYLIE, DAVID M., M.D. (Bowman Gray University)
Professor of Surgery and Chief, Urology (1963-1974).

DUCHARME, EARNEST P., Ph.D. (University of Minnesota)
Professor (Assistant Center Director and Plant Pathologist) IFAS, AREC-Lake Alfred (1946-1956).

DUCKWORTH, ALISTAIR M., Ph.D. (Johns Hopkins University)
Associate Professor of English (1973-1973).

DUCKWORTH, DONNA H., Ph.D. (Johns Hopkins University)
Associate Professor of Immunology and Medical Microbiology (1973-1975).

DUDECK, A. E., Ph.D. (Pennsylvania State University)
Associate Professor (Associate Ornamental Horticulturist), IFAS. (1970-1973).

DUFTY, JAMES WELLONS, Ph.D. (Lehigh University)
Associate Professor of Physics (1970-1974).

DUGAN, EDWARD THOMAS, Ph.D. (University of Florida)
Visiting Assistant Professor of Nuclear Engineering Sciences (1977-1977).

DUGAN, ROBERT JOHN, M.S.E. (University of Florida)
Associate in Chemistry (1969-1977).

DUGGAN, DENNIS E., Ph.D. (Oregon State University)
Associate Professor, Microbiology and Cell Science, Associate Microbiologist, IFAS (1969-1969).

DUNAVANT, BILLY G., Ph.D. (Purdue University)
Director, Environmental Health and Safety; Professor of Nuclear Engineering Sciences, Environmental Engineering Sciences, and Basic Dental Sciences (1960-1966).

DUNAVIN, LEONARD SYPRET, JR., Ph.D. (University of Florida)
Associate Professor (Associate Agronomist), IFAS Agricultural Research Center, Jay (1959-1967).

DUNCAN, ANDREW ADRIAN, Ph.D. (University of Maryland)
Professor and Center Director, Agricultural Research and Education Center. Homestead, IFAS (1975-1975).

DUNCAN, RUTH, M.A. (University of Alabama)
Teacher, P. K. Yonge Laboratory School (1972-1972).

DUNCAN, WILLIAM GRAHAM, Ph.D. (Purdue University)
Professor of Agronomy, IFAS (1970-1970).

DUNKLE, JOHN ROBERT, Ph.D. (Clark University)
Professor of Physical Sciences and Geography; Assistant Dean University College (1949-1965).

DUNN, ADRIAN J., Ph.D. (University of Cambridge)
Associate Professor of Neuroscience (1973-1977).

DUNN, BEN M., Ph.D. (University of California)
Assistant Professor of Biochemistry and Molecular Biology (1974-1974).

DUNN, JAMES H., B.S.P.E. (University of Florida)
Assistant Football Coach (1969-1969).

DUNN, ROBERT A., Ph.D. (Cornell University)
Assistant Professor (Assistant Nematologist), IFAS (1975-1975).

DUNNAM, FRANCIS EUGENE, Ph.D. (Louisiana State University)
Professor of Physics and Physical Sciences and Chairperson of Physics and Astronomy (1958-1975).

DUPREE, HERBERT, M.A. (University of Cincinnati)
Interim Assistant Professor of Social Sciences and Geography (1977-1977).

DURRANCE, KENNETH LEROY, M.Ag.
Professor (Animal Husbandman), IFAS (1954-1976).

DUPREE, SHERRY A., A.M.L.S.
Assistant Librarian, Reference and Bibliography (1977-1977).

DUTOIT, BRIAN MURRAY, Ph.D. (University of Oregon)
Professor of Anthropology (1966-1975).

DYKES, ELMA ETHEL, M.A. (New York University)
Assistant Professor, College of Nursing (1962-1966).

DYKES, MARY KAY, Ph.D. (University of Texas)
Associate Professor of Education (1972-1977).

EADES, JAMES LYNWOOD, Ph.D. (University of Illinois)
Associate Professor of Geology and Civil Engineering and Chairperson of Geology (1970-1973).

EASLEY, JOHN FOREST, M.S.
Assistant Professor (Assistant Animal Nutritionist), IFAS)1962-1962).

EASTON, IAN, Ph.D. (University of Florida)
Administrative Director, Outpatient Clinics (1975-1975).

EASTWOOD, RALPH ALLEN, Ph.D. (Cornell)
Professor, Food and Resource Economics Department, IFAS, (1957-1957).

EBCIOGLU, IBRAHIM K., Ph.D. (University of Minnesota)
Professor of Engineering Sciences (1961-1966).

ECKDAHL, JACK POLK, M.Ed. (University of Missouri)
Assistant Professor of Recreation (1951-1955).

EDDS, GEORGE TYSON, D.V.M. (Texas A & M University), Ph.D. (University of Minnesota)
Professor (Veterinarian), College of Veterinary Medicine-IFAS, (1962-1971).

EDDY, ELIZABETH M., Ph.D. (Columbia University)
Professor and Acting Chairperson of Anthropology (1967-1974).

EDMOND, CLARENCE D., Ph.D. (Iowa State)
Director & Professor, Community and Rural Development and Assistant Dean, Extension, IFAS (1977-1977).

EDSON, CHARLES GRANT, M.S.E. (University of Florida)
Associate Professor of Engineering Sciences (1946-1951).

EDWARDS, BRUCE HAVEN, Ph.D. (Dartmouth College)
Assistant Professor of Mathematics (1976-1976).

EDWARDS, GEORGE JOHN, B.A.
Assistant Professor (Assistant Biochemist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1953-1970).

EDWARDSON, JOHN RICHARD, Ph.D. (Harvard University)
Professor of Agronomy, IFAS (1953-1966).

EDWARDSON, MICKIE N., Ph.D. (Michigan State University)
*Professor of Journalism and Communications (1956-1971).**

EIDSON, GERALD H., B.S.
Associate in Medical Program Development, Office of Vice President for Health Affairs, J. Hillis Miller Health Center (1975-1975).

EILAND, BARNEY RAY, M.S. (Cornell University)
Assistant Professor (Assistant Agricultural Engineer), IFAS Agricultural Research and Educational Center, Belle Glade (1974-1974).

EISENBERG, MARTIN ALLAN, D.Eng. (Yale University)
Professor of Engineering Sciences (1966-1975).

EITZMAN, DONALD V., M.D. (University of Iowa)
Professor of Pediatrics, and Chief, Nematology (1958-1969).

ELDRIDGE, J. EVAN, M.S.E.E. (Fla. Institute of Technology)
Computer Research Specialist, Bureau of Economic and Business Research (1971-1975).

ELGERD, OLLE INGEMAR, D.Sc. (Washington University of St. Louis, Missouri)
*Professor of Electrical Engineering (1956-1962).**

ELKINS, VIRGIL LYNN, M.S.A. (Florida A & M)
Professor, Food and Resource Economics Department, IFAS (1949-1961).

ELLENSON, EUGENE, B.A.
Director of Gator Boosters (1960-1974).

ELLINGTON, ERNESTINE H., M.Ed. (University of Florida)
Associate in Psychiatry (1974-1976).

ELLINGWOOD, KENNETH E., M.D. (University of Missouri)
Assistant Professor of Radiation Therapy (1976-1976).

ELLIOTT, HERSCHEL HUGH, Ph.D. (Yale University)
Associate Professor of Philosophy (1955-1960.)

ELLIOTT, PAUL R., Ph.D. (University of Michigan)
Assistant Dean for Tallahassee Program in Medical Sciences and Professor, College of Medicine (1971-1974).

ELLIOTT, ROGER W., Ph.D. (University of Texas)
Professor and Chairman of Computer and Information Sciences, College of Engineering (1977-1977).

ELLIS, BETTY RUTH, Ed.D. (Wayne State University)
*Assistant Professor of Education (1965-1968).**

ELLIS, HOWARD D., B.S.E.E.(Purdue University)
Lieutenant, U.S. Navy, Assistant Professor of Naval Science (1972-1972).

ELLIS, WILLIAM HOBART, Ph.D. (Florida State University)
Associate Professor of Nuclear Engineering Sciences (1962-1966).

ELMORE, WILLIAM E., B.S. C.P.A. (the Citadel)
Vice President for Administrative Affairs (1950-1967).

ELMSTROM, GARY WILLIAM, Ph.D. (University of California)
Associate Professor (Associate Horticulturist), and Acting Center Director, IFAS Agricultural Research and Education Center, Leesburg (1969-1974).

ELNICKI, RICHARD A., D.B.A. (Harvard University)
Associate Professor of Management and Associate Professor of Health and Hospital Administration (1971-1971).

EMERSON, ANN P., M.S. (University of Florida)
Program Director and Associate Professor, Department of Clinical and Community Dietetics, IFAS (1969-1974).

EMERSON, ROBERT D., Ph.D. (Purdue University)
Associate Professor, Food and Resource Economics Department IFAS (1970-1976).

EMMEL, THOMAS C., Ph.D. (Stanford University)
Professor and Chairperson, Department of Zoology (1968-1976).

ENGELHARD, ARTHUR W., Ph.D. (Iowa State University)
Professor (Plant Pathologist), IFAS Agricultural Research and Education Center. Bradenton (1966-1977).

ENNEKING, WILLIAM F., M.D. (University of Wisconsin)
Professor and Chairperson, Department of Orthopaedic Surgery (1959-1974).

ENNIS, William B., Ph.D. (University of Wisconsin)
Professor and Center Director, IFAS, Agricultural Research Center, Ft. Lauderdale (1975-1975).

ENO, CHARLES FRANKLIN, Ph.D. (Purdue University)
Professor (Soil Microbiologist) and Chairperson of Soil Science Department, IFAS (1950-1965).

ENOCH, JAY M., Ph.D. (Ohio State University)
Graduate Research Professor of Ophthalmology (1973-1973).

ENTNER, MARVIN LEE, Ph.D. (University of Minnesota)
Associate Professor of History (1961-1968).

EOFF, KAY MARVIN, Ph.D. (University of Florida)
Assistant Professor of Physical Sciences (1962-1968).

EPPES, BILL GORTON, M.Arch. (University of Texas)
Professor of Building Construction (1968-1973).

EPTING, FRANZ R., Ph.D. (Ohio State University)
Associate Professor of Psychology (1967-1974).

ERICKSON, ROBERT A., M.D. (University of Florida)
University Physician (1974-1974).

ERISMAN, JOHN G., Ph.D. (University of Illinois)
Associate Professor for Extension Environment and Safety, IFAS (1975-1975).

ERVIN, ROBERT C., B.S. (University of Southern Mississippi)
Assistant Hospital Director, Billings, Credit & Collections, Shands Teaching Hospital & Clinics (1977-1977).

ESKAFI, FRED M., Ph.D. (Mississippi State University)
Assistant Research Scientist, IFAS, Jamaica (1977-1977).

EVERETT, PAUL HARRISON, Ph.D. (Purdue University)
Professor (Soils Chemist), IFAS Agricultural Research Center, Immokalee (1958-1968).

EWEL, JOHN J., Ph.D. (University of North Carolina)
Associate Professor of Botany, Arts and Sciences (1971-1976).

EWEL, KATHERINE C., Ph.D. (University of Florida)
Assistant Professor, (Ecology), IFAS (1972-1977).

EYLER, JOHN ROBERT, Ph.D. (Stanford University)
Assistant Professor of Chemistry (1974-1974).

FABRICK, ARTHUR L., A.C.S.W. (University of North Carolina)
Associate Professor of Social Work in Psychiatry (1959-1970).

FAGERBERG, SEIGFRED WALTER, Ed.D. (Univ. of So. Mississippi)
Associate Professor and Chairperson of Health Education and Safety (1971-1976).

FAHIEN, RAYMOND W., Ph.D. (Purdue University)
Professor of Chemical Engineering (1964-1964).

FAIRBANKS, CHARLES H., Ph.D. (University of Michigan)
Distinguished Service Professor of Anthropology (1963-1976).

FAIRCHILD, GARY F., Ph.D.
Assistant Professor, Food and Resource Economics Department, DC, IFAS (1971-1971).

FARBER, ERICH ALEXANDER, Ph.D. (Iowa)
Professor of Mechanical Engineering (1954-1954).

FARICY, JOHN H., Ph.D. (University of Minnesota)
Assistant Dean of Undergraduate Study, College of Business Administration and Associate Professor of Marketing (1966-1974)

FARMER, K. BOLLING, Ph.D. (University of Texas)
Assistant Professor of Mathematics (1974-1974).

FARRAH, SAMUEL R., Ph.D. (Penn. State Univ.)
Assistant Professor, Microbiology and Cell Science, IFAS (1977-1977).

FARRINGTON, WILLIAM S., Ph.D. (Ohio State University)
Assistant Professor of Agricultural and Extension Education (1974-1974).

FAST, THOMAS B., D.D.S. (Ohio State University)
M.S.D. (Indiana University) Assistant Dean for Clinical Affairs and Professor of Oral Medicine, College of Dentistry (1971-1974).

FEARN, RICHARD LEE, Ph.D. (University of Florida)
Associate Professor of Engineering Sciences (1965-1975).

FEARNEY, EDWARD MAURICE, B. Arch. (Carnegie Institute)
*Associate Professor or Architecture (1946-1958).**

FEASTER, JOHN PIPKIN, Ph.D. (University of North Carolina)
Professor (Biochemist), IFAS (1951-1968).

FEINBERG, ROBERT M., B.S., B.A. (University of Florida)
Associate Director, Office of Instructional Resources (1962-1974).

FEINSINGER, PETER, Ph.D. (Cornell University)
Assistant Professor or Zoology (1976-1976).

FEISS, C., M.C.P., F.A.I.A., A.I.P. (M.I.T.)
Professor or Urban and Regional Planning (1971-1975).

FELDHERR, CARL M., Ph.D. (University of Pennsylvania)
Professor of Anatomy and Biochemistry (1967-1977).

FELDMAN, ALBERT W., Ph.D. (University of Minnesota)
Professor (Plant Pathologist) IFAS, AREC-Lake Alfred (1959-1959).

FELDMAN, JACK M., Ph.D. (University of Illinois)
Associate Professor of Management (1972-1972).

FELLERS, PAUL J., Ph.D. (Michigan State University)
Adjunct Assistant Professor (Assistant Food Technologist) IFAS, DC, AREC-Lake Alfred (1965-1965).

FELMAN, ALVIN H., M.D. (University of Cincinnati)
Professor of Radiology (1969-1974).

FENN, HENRY ANDERSON, LL.B. (Yale University)
Professor of Law, Dean Emeritus, and Distinguished Service Professor, College of Law (1948-1975).

FENNELL, ROBERT S., III, M.D. (University of Florida)
Assistant Professor of Pediatric Nephrology and Medical Director for the Comprehensive Children's Kidney Treatment Center (1973-1974).

FENNO, CHARLES C., M.B.A. (Columbia University)
Associate Director of Development Foundations and Corporations (1974-1974).

FERGUSON, RAYMOND CARL, M.Ed. (Penn State Univ.)
Associate Professor of Education (1962-1975).

FERGUSON, SARAH CAROLINE, M.S. in L.S. (Columbia)
Associate Librarian, P.K. Yonge Laboratory School (1951-1962).

FERKOVICH, STEPHEN MICHAEL, Ph.D. (University of Wyoming)
Assistant Professor (Assistant Entomologist), IFAS, USDA (1973-1973).

FIELD, F. PETER, Ph.D. (University of Florida)
Associate Professor of Pharmacy and Physiology and Associate Chairman, Pharmacy (1973-1973).

FIELDS, MICHAEL J., Ph.D. (Texas A & M University)
Assistant Professor (Assistant Animal Physiologist), IFAS (1973-1973).

FIGUERAS, JUAN A., Ph.D. (University of Havana)
Associate Research Scientist, International Programs, IFAS, Bolivia (1976-1976).

FILER, JOHN E. (Chicago)
Interim Assistant Professor of Economics (1974-1974).

FILLMER, HENRY T., Ph.D. (University of Ohio)
Professor of Education (1967-1972).

FINGER, KENNETH FRANKLIN, Ph.D. (University of Wisconsin)
Associate Vice President for Health Affairs, Dean and Professor, College of Pharmacy (1968-1974).

FINLAYSON, BIRDWELL, M.D., Ph.D. (University of Chicago)
Professor of Surgery (1967-1973).

FINLAYSON, EDWIN H., M.S.A. (University of Florida)
Associate in Agricultural Economics, Food and Resource Economics (1973-1975).

FINLEY, MARTHA CLAUDETTE, M.S. (Vanderbilt University)
Associate Professor of Physical Therapy (1969-1974).

FINN, HARVEY D.,
Systems Coordinator (1967-1976).

FISCHLER, IRA SAMUEL, Ph.D. (Stanford University)
Assistant Professor (1973-1973).

FISCHLSCHWEIGER, WERNER, Ph.D. (University of Graz)
Professor of Basic Dental Sciences, College of Dentistry (1969-1973).

FISHER, DALE J., Ph.D. (Indiana University)
Professor of Chemistry and Professor of Radiology, VAH (1974-1974).

FISHER, FRANCES W., M.Ed. (University of Florida)
Assistant Professor of Medical Technology (1973-1974).

FISHER, FRANCINE E., M.S.
Assistant Professor (Assistant Plant Pathologist) IFAS, Agricultural Research and Educational Center, Lake Alfred (1946-1946).

FISHER, JAMES F., Ph.D. (Pennsylvania State University)
Adjunct Associate Professor (Associate Chemist) IFAS, DC, AREC-Lake Alfred (1969-1969).

FISHER, MARTIN J., Ph.D. (West Virginia University)
Assistant Professor of Physiology (1972-1974).

FISHER, NORMA PAIGE, M.A.E. (University of Florida)
Associate Professor of Physical Therapy and Neurology (1964-1972).

FISHER, RICHARD F., Ph.D. (Cornell University)
Assistant Professor, (Silviculture), IFAS (1977-1977).

FISHER, WALDO R., M.D. (University of Pennsylvania)
Associate Professor of Medicine and Biochemistry (1965-1971).

FISKELL, JOHN GARTH AUSTIN, Ph.D. (McGill University)
Professor of Soil Science (Soil Biochemistry), IFAS (1951-1961).

FISHKIND, HENRY H., Ph.D. (Indiana University)
Assistant Professor of Economics; Assistant Professor, Bureau of Economic and Business Research (1975-1975).

FITZGERALD, CONSTANCE K., M.D. (Washington University)
Associate Professor of Ophthalmology (1971-1975).

FITZGERALD, LAWRENCE T., Ph.D. (University of Florida)
Assistant Professor of Radiology (1974-1974).

FITZGERALD, PAUL W., Ed.D. (Florida State University)
Professor of Education (1975-1975).

FITZPATRICK, GEORGE, Ph.D. (Rutgers University)
Assistant Research Scientist (Entomologist), IFAS, Agricultural Research Center, Ft. Lauderdale (1976-1976).

FLANEGAN, JAMES B., Ph.D. (University of Michigan)
Assistant Professor of Immunology and Medical Microbiology (1978-1978).

FLANNERY, MERLE ELIZABETH, Ed.D. (Pennsylvania State University)
Assistant Professor of Education (1966-1966).

FLESHER, CAROL K., Ph.D. (University of Florida)
Counseling Psychologist, University Counseling Center, Assistant Professor of Psychology (1965-1965).

FLOWERS, JOHN WILSON, Ph.D. (University of Virginia)
Professor of Physics (1947-1953).

FLUCK, RICHARD CONRAD, Ph.D. (N. Carolina State University)
Professor (Agricultural Engineer), IFAS, (1965-1977).

FOGLER, H. RUSSELL, Ph.D. (Columbia University)
Associate Professor of Management and Director of Management Center (1971-1972).

FOLEY, JEREMY, M.Ed.
Ticket Manager (1977-1977).

FOLKERTS, LORRAINE NERO, B.S.P.
Assistant in Pharmacy (1974-1975).

FOLTZ, JOHN L., Ph.D. (University of Michigan)
Assistant Professor, IFAS (1977-1977).

FORBES, RICHARD B., Ph.D. (Pennsylvania State University)
Associate Professor (Associate Soils Chemist), IFAS, Agricultural Research and Educational Center, Sanford (1948-1967).

FORD, HARRY W., Ph.D. (Ohio State University)
Professor (Horticulturist) IFAS, AREC-Lake Alfred (1950-1962).

FOREMAN, RONALD C., JR., Ph.D. (University of Illinois)
Associate Professor of English, Director of Afro-American Studies Program (1970-1970).

FORGNONE, CHARLES, Ed.D. (George Peabody College)
Professor of Education and Chairman of Special Education (1970-1976)

FORRESTER, DONALD JASON, Ph.D. (University of California)
Associate Professor (Associate Parasitologist), College of Veterinary Medicine-IFAS (1969-1973).

FOSTER, MAELEE THOMSON, M.F.A. (University of Bridgeport)
Associate Professor of Architecture (1971-1976).

FOSTER, MALCOM T. JR., M.D. (Bowman Gray)
Associate Professor and Chairman of Medicine, JHEP (1977-1977).

FOUSE, SARAH BAIRD, M.M.
Associate Professor of Music (1968-1974).

FOUST, CHARLES WILMOTT, B.S.
Assistant in Chemical Education (1970-1970).

FOX, DALLAS R., M.S.A. (University of Florida)
Associate Director, Division of Planning and Analysis (1974-1974).

FOX , JACKSON LELAND, Ph.D. (University of Minnesota)
Associate Professor of Environmental Engineering Sciences (1969-1975).

FOX, WILLIAM MCNAIR, Ph.D. (Ohio State University)
Professor of Industrial Relations and Management (1954-1963).

FRANCIS, RICHARD LANE, Ph.D. (Northwestern University)
Professor of Industrial and Systems Engineering (1971-1971).

FRANCIS, VIRGINIA GLADYS, M.A.
Associate Librarian, Reference and Bibliography (1964-1971).

FRANCO, ADRIENNE, M.L.S. (Queens College)
Assistant Librarian, Catalog Department (1976-1976).

FRANKEL, LAWRENCE S., M.D. (State University of New York)
Instructor of Pediatrics (1976-1976).

FRANKLIN, HERBERT, Ed.D. (Indiana University)
Assistant Professor of Education (1974-1974).

FRANZ, LAWRENCE R., JR., M.S.T.
Associate in Natural Sciences, Florida State Museum (1972-1972).

FRAUMAN, SALLY A., M.S.N. (University of Florida)
Assistant Professor, College of Nursing (1974-1977).

FRAZER, WILLIAM JOHNSON, JR., Ph.D. (Columbia University)
*Professor of Economics (1957-1968).**

FRAZER, WINIFRED LOESCH, Ph.D. (University of Florida)
Professor of English (1955-1972).

FRAZIER, CHARLES EDWIN, Ph.D. (Southern Illinois University)
Associate Professor of Sociology (1972-1977).

FREELAND, JAMES JACKSON, J.D. (University of Florida)
*Professor of Law (1957-1963).**

FREEMAN, ELEANOR F. L., R.N.
Associate in Surgery (1966-1966).

FREEMAN, GEORGE ROLAND, M.S.A. (University of Florida)
Assistant Professor (Assistant Agricultural Engineer) and Director, Facilities Operations, IFAS (1950-1977).

FREEMAN, THOMAS EDWARD, Ph.D. (Louisiana State University)
Professor (Plant Pathologist), IFAS, (1956-1968).

FREEMAN, WATSON LOUIS, M.S.E.
Associate Professor of Mechanical Engineering; Assistant Dean of the College of Engineering (1953-1977).

FREGLY, MARILYN S., Ph.D. (University of Florida)
Assistant Professor of Behavioral Studies, Journalism and Communications (1973-1973).

FREGLY, MELVIN J., Ph.D. (University of Rochester)
Professor of Physiology (1956-1965).

FRENCH, WILLIAM JOHN, Ph.D. (New York State University)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research Center, Monticello (1968-1974).

FREUND, GERHARD, M.D. (J. W. Goethe University, Germany)
Professor of Medicine and Neuroscience (1964-1975).

FRIAS, JAIME L., M.D. (University of Chile)
Professor of Pediatrics and Director of Birth Defects Center (1970-1977).

FRIED, MELVIN, Ph.D. (Yale University)
Professor of Biochemistry and Molecular Biology, and Assistant Dean for Graduate Education in Medical Sciences (1956-1972).

FRISTOE, CHARLES WESLEY, Ph.D. (University of Illinois)
Associate Professor of Economics (1950-1955).

FRITZ, GEORGE J., Ph.D. (Purdue University)
Associate Professor (Associate Plant Pathologist), IFAS (1960-1964).

FROMING, WILLIAM J., Ph.D. (University of Texas, Austin)
Assistant Professor of Psychology (1977-1977).

FRY, JACK LEROY, Ph.D. (Purdue University)
Professor (Poultry Science), Assistant Dean for Resident Instruction, IFAS (1964-1975).

FUJIMOTO, JUNHEI, D.D.S. (Kyushu Dental University), M.S.D. (Indiana University)
Assistant Professor of Occlusion and Fixed Prosthodontics, College of Dentistry (1976-1976).

FULLER, GARY , B.Litt. (Oxford University)
Assistant Professor of Philosophy (1972-1972).

FULLER, THOMAS J., M.D. (Northwestern University)
Assistant Professor of Medicine, VAH (1975-1975).

FULLINGTON, ROBERT S., B.S.B.A. (University of Florida)
Director, Records and Registration (1973-1977).

FUNK, ARTHUR LAYTON, Ph.D. (University of Chicago)
Professor of History and Humanities and Chairperson of Department of History (1946-1962).

FUNKHOUSER, ROBERT E., JR., M.S. (Rensselaer Institute)
Lt. Colonel, U.S. Air Force, Associate Professor of Aerospace Studies (1974-1974).

FUQUAY, STEPHEN FREDERIC, M.A., M.S.
Associate Librarian, Catalog (1972-1977).

FURMAN, THOMAS DESAUSSURE, M.S.E. (University of Florida)
Professor of Environmental Engineering Sciences and Affiliate Professor of Civil Engineering (1951-1964).

GABBAY, EDMOND J., Ph.D. (Columbia University)
Professor of Chemistry and Biochemistry (1969-1975).

GABIANELLI, VINCENT JAMES, M.Ed.
Curator and Chairman of Department of Interpretation, Florida State Museum (1968-1971).•

GADSDEN, THOMAS, Ed.D (University of Florida)
Associate Professor, P. K. Yonge Laboratory School (1967-1977).

GAFFNEY, JEROME JOSEPH, M.S. (Pennsylvania State University)
Assistant Agricultural Engineer, USDA, IFAS, (1966-1966).

GAITANIS, LOUIS ANDREW, J.D. (University of Florida)
Associate Professor of Real Estate and Urban Analysis (1946-1951).

GAITHER, ROBERT BARKER, Ph.D. (University of Illinois)
Professor of Mechanical Engineering and Chairperson of Department (1962-1966).

GALE, MARC A., D.M.D. (Tufts University)
Associate Professor of Operative Dentistry, College of Dentistry (1972-1977).

GALE, STEVEN H., Ph.D. (University of Southern California)
Associate Professor of English (1974-1974).

GALLAHER, RAYMOND N., Ph.D. (University of Georgia)
Associate Professor of Agronomy, IFAS (1976-1976).

GAMBLE, DOVIE JANE, M.A. (University of New York)
Assistant Professor of Recreation (1977-1977).

GAMBLE, JOHN F., Ph.D. (Rutgers University)
Associate Research Scientist of Botany, IFAS (1967-1975).

GAMMON, NATHAN, JR., Ph.D. (Ohio State University)
Professor of Soil Science (Soil Chemistry), IFAS (1946-1946).

GANNON, MICHAEL VALENTINE, Ph.D. (University of Florida)
Professor of Religion and History and Assistant Dean, College of Arts and Sciences (1967-1974).

GANO, OVID RAYMOND, B.E.E. (University of Florida)
Assistant Professor of Radiology (1970-1970).

GARCIA-BENGOCHEA, FRANCISCO, M.D. (University of Havana and Tulane University)
Distinguished Service Professor of Surgery (1962-1976).

GARCIA, RUBEN V., Ph.D. (University of Texas)
Assistant Professor of Portuguese and Spanish (1977-1977).

GARDNER, VIRGINIA D., M.S. (North Carolina State-Raleigh)
Extension Home Economics Agent III, IFAS (1951-1970).

GARG, LAL C., Ph.D. (University of Florida)
Associate Professor of Pharmacology and Therapeutics (1970-1976).

GARIN, EDUARDO H., M.D. (University of Chile)
Assistant Professor of Pediatrics and Assistant Director of Comprehensive Children's Kidney Treatment Center (1974-1975).

GARNICA, ADOLFO D., M.D. (University of California)
Assistant Professor of Pediatrics and Chief of the Gastroenterology Unit (1974-1975).

GARRARD, LEON A., Ph.D. (University of Florida)
Associate in Plant Physiology, IFAS (1963-1972).

GARRETT, EDWARD ROBERT, Ph.D. (Michigan State University)
Graduate Research Professor of Pharmacy (1961-1961).

GARRETT, RICHARD EDWARD, Ph.D. (University of Virginia)
Professor of Physics and Physical Sciences and Associate Chairperson of Physics (1963-1974).

GARRIGUES, ROBERT G., Ph.D. (Florida State University)
Associate in Health and Hospital Administration and Assistant Vice President for Management and Budget Office of Vice President for Health Affairs (1971-1977).

GARRINGTON, GEORGE E., D.D.S. (University of Maryland), M.P.H. (Johns Hopkins University), M.S. (Georgetown Univ.)
Assistant Dean for Admissions & Student Financial Aid: Professor of Oral Medicine, College of Dentistry (1973-1976).

GARRISON, ROBERT D., M.D. (University of North Carolina)
Assistant Professor of Pediatrics (JHEP) (1973-1973).

GARVIN, JEWEL H., A.B., B.S. in L.S.
Librarian, J. Hillis Miller Health Center Library (1960-1964).

GASCHE, ROBERT THURSTON, M.Ed. (University of Miami)
Instructor, P. K. Yonge Laboratory School (1968-1972).

GASCHO, GARY JOHN, Ph.D. (Michigan State University)
Associate Professor (Associate Plant Nutritionist), IFAS, Agricultural Research and Education Center, Belle Glade (1968-1973).•

GASKIN, JACK MICHAEL, D.V.M., Ph.D. (Cornell University)
Assistant Professor (Assistant Virologist) College of Veterinary Medicine-IFAS and Professor of Immunology and Medical Microbiology (1973-1973).

GASKINS, MURRAY HENDRICKS, Ph.D. (University of Florida)
Professor (Plant Physiologist), IFAS, USDA (1973)

GASSET, ANTONIO R., M.D. (Boston University)
Associate Professor of Ophthalmology (1971-1975).

GATER, ROGER ALLEN, Ph.D., (Purdue University)
Associate Professor of Mechanical Engineering (1968-1973).•

GAY-CROSIER, RAYMOND, Docteur es Lettres (Berne University)
Professor of French (1967-1973).

GEBHARDT, BRYAN M., Ph.D. (Tulane University)
Associate Professor of Pathology (1969-1974).

GELATT, KIRK N., V.M.D. (University of Pennsylvania)
Professor, College of Veterinary Medicine, and Department of Ophthalmology, College of Medicine (1976-1976).

GELLINEK, CHRISTIAN J., Ph.D. (Yale University)
Professor of German (1971-1971).•

GELMAN, STANLEY R., M.D. (University of Florida)
Assistant Professor of Obstetrics and Gynecology (1975-1975).

GENUNG, WILLIAM GORDON, M.S. (University of Florida)
Professor (Entomologist), IFAS Agricultural Research and Education Center, Belle Glade (1949-1970).

GEORGE, PAUL S., Ed.D. (George Peabody College for Teachers)
Associate Professor of Education (1971-1976).

GERALDSON, CARROLL MORTON, Ph.D. (University of Wisconsin)
Professor (Soils Chemist), IFAS Agricultural Research and Educational Center, Bradenton (1951-1969).

GERBER, JOHN FRANCIS, Ph.D. (University of Missouri)
Professor (Climatologist), and Director, IFAS Grants Program (1960-1973).

GERENCSER, GEORGE A., Ph.D. (Indiana University)
Assistant Professor of Physiology (1975-1975).

GESSNER, IRA H., M.D. (University of Vermont)
Professor of Pediatrics and Chief of Pediatric Cardiology (1960-1970).

GETZEN, SAMUEL PACE
Manager, Campus Shop and Bookstore (1949-1960).

GIBBS, CHARLES, B.S. (University of Tampa)
Captain, U.S. Army, Assistant Professor of Military Science (1977-1977).

GIBBS, CHARLES H., Ph.D. (Case Western Reserve University)
Assistant Professor of Basic Dental Sciences, College of Dentistry (1974-1974).

GIBBS, CHARLES P., M.D. (Indiana University)
Associate Professor of Anesthesiology and Obstetrics and Gynecology and Coordinator of Clinical Teaching in OB Anesthesia (1972-1976).

GIBSON, DAVID WYLIE, M.S.C.E. (University of Miami)
Associate Professor of Civil Engineering (1974-1974).

GIESEL, JAMES T., Ph.D. (University of Oregon)
Associate Professor of Zoology (1970-1975).

GIFFORD, GEORGE EDWIN, Ph.D. (University of Minnesota)
Professor of Immunology and Medical Microbiology, College of Medicine and Professor of Microbiology and Cell Science, IFAS (1957-1968).

GILBERT, CARTER ROWELL, Ph.D. (University of Michigan)
Associate Curator of Ichthyology, Florida State Museum, Joint Associate Professor of Zoology and Latin American Studies (1961-1972).

GILBERT, EDWARD ETIMAR, B.A. (West. St. College of Colorado)
Assistant in Administration, IFAS (1973-1973).

GILKISON, BETTY GAY, Ed.D. (University of Oregon)
Associate Professor of Computer and Information Sciences, College of Engineering (1971-1977).

GILL, ALICE A., M.S. (Boston University)
Associate Professor of Occupational Therapy (1972-1977).

GLEIM, IRVIN N., Ph.D. (U. of Illinois), C.P.A. (Illinois)
Associate Professor of Accounting (1971-1975).•

GLICKSBERG, MANDELL, LL.M. (New York University)
Professor of Law (1953-1959).

GODBEY, KAROLYN L., M.S.N. (University of Florida)
Assistant Professor, College of Nursing (1975-1977).

GODDARD, FREDERICK OWEN, Ph.D. (Duke University)
Associate Professor of Economics (1966-1972).

GODDARD, RAY EVERETT, Ph.D. (Texas A & M University)
Professor of Forest Genetics, IFAS (1959-1976).

GOFFMAN, IRVING, J., Ph.D. (Duke University)
Professor of Economics (1959-1970).

GOLDBERG, EUGENE P., Ph.D. (Brown University)
Professor of Materials Science and Engineering (1975-1975).

GOLDHURST, WILLIAM, Ph.D. (Tulane University)
Professor of Humanities (1964-1976).•

GOLDMAN, JACQUELIN ROBERTA, Ph.D. (University of Illinois)
Professor of Clinical Psychology and Psychology (1961-1976).

GONDECK, ALLAN R., Ph.D (University of Florida)
Assistant Engineer in Coastal and Oceanographic Engineering (1974-1974).

GOODALE, THOMAS G., Ph.D. (Iowa State University)
Dean for Student Services and Associate Professor of Education (1973-1973).

GOODING, JAMES W., III, M.S.F. (University of Florida)
Assistant in Forest Soils and Nutrition, IFAS (1972-1972).

GORBET, DANIEL WAYNE, Ph.D. (University of Oklahoma)
Associate Professor (Associate Agronomist), IFAS, Agricultural Research Center, Marianna (1970-1975).

GORDON, ANDREW M., Ph.D. (Univ. of California at Berkeley)
Assistant Professor of English (1975-1975).

GORDON, JOHN R., Ph.D. (University of Wisconsin)
Associate Professor (Rural Development), Food and Resource Economics, IFAS (1977-1977).

GORDON, MICHAEL WALLACE, J.D. (University of Connecticut)
Professor of Law (1968-1971).

GORDON, RICHARD E., M.D., Ph.D. (University of Michigan)
Associate Professor of Psychiatry and Clinical Psychology Clinical Psychology (1967-1967).

GORDON, RONALD J., Ph.D. (Princeton University)
Associate Professor of Chemical Engineering, Medicine and Surgery (1969-1974).•

GORMAN, BENJAMIN L., Ph.D. (Tulane University)
Professor and Chairperson of Sociology Department (1968-1973).

GOSLINGA, CORNELIS Ch., Ph.D. (Nijmegen University)
Professor of Humanities and History (1967-1967).

GOTTESMAN, STEPHEN T., Ph.D. (University of Manchester)
Associate Professor of Astronomy (1971-1976).

GOULD, ROBERT WILLIAM, Ph.D. (University of Florida)
Professor of Materials Science and Engineering (1964-1974).

GOWAN, SAMUEL CHARLES, M.A.
Assistant Director of Libraries (1973-1973).

GRAEFFE, ARNOLD DIDIER, Ph.D. (Berlin)
Professor of Humanities (1948-1963).

GRAETZ, DONALD A., Ph.D. (University of Wisconsin)
Associate Professor of Soil Science (Soil Environment), IFAS (1971-1976).

GRAHAM, MARY ELIZABETH, M.A.E. (Arizona State University)
Assistant Professor of Professional Physical Education (1964-1966).

GRAINGER, DAVID A., B.D.S. (Sydney University), D.D.S. (Northwestern University)
Professor and Chairman of Operative Dentistry, College of Dentistry (1969-1974).

GRAMLING, LEA GENE, Ph.D. (University of Florida)
Professor of Pharmaceutical Chemistry (1946-1974).

GRAMS, RALPH R., M.D. (University of Minnesota)
Professor of Pathology (1973-1977).

GRANT, JOHN H., Ph.D. (New York University)
Associate Professor of Computer and Information Sciences, College of Engineering (1971-1977).

GRATER, HARRY ALLEN, Ph.D. (Penn State University)
Acting Dean of University College, Professor of Behavioral Studies (1965-1965).

GRAVES, SAMUEL RAY, B.A.
Director of Athletics (1960-1969).

GRAVES, SHIRLEY A., M.D. (University of Miami)
Associate Professor of Anesthesiology and Pediatrics and Chief, Division of Pediatric Anesthesiology (1970-1975).

GRAY, JOHN LEWIS, D.F. (Duke University)
Professor (Forest Policy), IFAS (1963-1973).

GRAY, ROLAND W., M.D. (University of Tennessee)
Assistant Professor of Pediatrics (1976-1976).

GRAY, SUSAN D., B.S.A. (University of Florida)
Assistant in Vegetable Crops, IFAS (1975-1975).

GREANY, PATRICK DENNIS, Ph.D. (University of California, Riverside)
Assistant Professor (Assistant Entomologist), USDA, IFAS, (1973-1973).

GREEN, ALEX EDWARD SAMUEL, Ph.D. (University of Cincinnati)
Graduate Research Professor of Physics; Nuclear Engineering Sciences and Electrical Engineering (1963-1963).

GREEN, JAMES RUSSELL, JR., M.D. (University of Virginia)
Professor of Community Health and Family Medicine and Medicine (1959-1974).

GREEN, RICHARD HAMILTON, Ph.D. (University of California)
Professor of English (1971-1971).

GREEN, RICHARD LOUIS, Ph.D. (University of Illinois)
Associate Professor of Theatre (1967-1972).

GREEN, VICTOR EUGENE, JR., Ph.D. (Purdue University)
Professor (Agronomist), IFAS (1951-1965).

GREENWALT, THOMAS CHARLES, Ed.D. (University of Florida)
Associate Professor (Extension 4-H Youth Specialist), IFAS (1962-1966).

GREENE, CALVIN CLAY, M.S.M.E.
Director of Physical Plant (1950-1950).

GREENHALGH, RICHARD ARLEN, Ph.D. (University of Missouri)
Assistant Professor (Assistant Agricultural Economist), FRED, IFAS, USDA (1974-1974).

GREENWOOD, GORDON E., Ed.D. (University of Indiana)
Professor of Education (1967-1976).

GREER, MELVIN, M.D. (New York University)
Professor and Chairperson, Department of Neurology (1961-1974).

GREGG, JAMES HENDERSON, Ph.D. (Princeton University)
Professor, Microbiology and Cell Science, IFAS (1951-1963).

GREGORY, JESSE FORREST, III, Ph.D. (Michigan State Univ.)
Assistant Professor (Assistant Chemist), IFAS (1977-1977).

GREGORY, JOHN W., Ph.D. (Ohio State University)
Associate Professor of Education (1972-1977).

GRIERSON, WILLIAM, Ph.D. (Cornell University)
Professor (Horticulturist) IFAS, AREC-Lake Alfred (1952-1965).•

GRIFFIN, DANA, III, Ph.D. (University of Tennessee)
Associate Professor of Botany, Arts and Sciences (1967-1972).

GRIFFIN, GEORGE MELVIN, Ph.D. (Rice University)
Professor of Geology (1970-1970).

GRIFFIN, NANCY CLAIRE, M.S. (University of Tennessee)
Instructor, P.K. Yonge Laboratory School (1967-1972).

GRIFFIS, CAROLYN STALLINGS, Ph.D. (University of Florida)
Assistant Professor of Social Sciences, Director of Cooperative Education (1965-1969).

GRIFFITH, ANTHONY C., M.A.
Associate Athletic Trainer (1973-1973)

GRIFFITH, JOHN L., Ed.D. (Oklahoma State University)
Professor of Journalism and Communications and Chairperson, Department of Journalism (1969-1975).

GRIGGS, HARRY H., Ph.D. (University of Iowa)
Professor of Journalism and Communications (1958-1970).

GRIGGS, RICHARD A., Ph.D. (Indiana University)
Assistant Professor of Psychology (1974-1974).

GRIGSBY, JOHN R., Ed.D. (Columbia University)
Associate Professor of Music (1967-1973).

GRIM, CHARLES, JR., M.S.B.C. (University of Florida)
Assistant Professor of Building Construction (1967-1970).

GRIMES, PAULETTE, M.A.
Assistant Dean for Student Services (1976-1976).

GRIMM, JAMES C., M.Ed. (Bowling Green St. Univ.)
Director of Housing (1977-1977).

GRISSELL, EDWARD ERIC, Ph.D. (University of California, Davis)
Assistant Professor (Assistant Entomologist), IFAS, DPI (1973-1973).

GRISSOM, EUGENE EDWARD, M.F.A.
Professor of Art and Chairperson of Department of Art (1953-1966).

GRONWALL, RONALD R., D.V.M., Ph.D. (Univ. of Calif. at Davis)
Associate Professor and Director, Office of Veterinary Medical Education, College of Veterinary Medicine (1975-1977).

GROOMS, CAROLE H., M.L.S. (Florida State University)
Assistant Law Librarian (1974-1974).

GROOMS, DONALD A., M.A.
Associate Professor of Journalism and Communications (1962-1970).

GRUBAR, RICHARD A., B.S.
Assistant Basketball Coach (1973-1973).

GUDAT, JOHN C., Ph.D. (Cornell University)
Assistant Professor of Pathology (1973-1973).

GUERTIN, WILSON H., Ph.D. (Michigan State University)
Professor of Education (1960-1968).•

GUINAGH, BARRY JOSEPH, Ph.D. (Michigan State University)
Associate Professor of Education (1968-1974).

GULL, DWAIN D., Ph.D. (Cornell University)
Associate Professor (Horticulturist), IFAS (1958-1973).

GUNBY, WILLIAM R., JR., M.B.A. (Stetson University)
Associate Professor of Building Construction (1973-1973).

GUNTER, DANNY L., Ph.D. (University of Tennessee)
Assistant Professor (Extension Production Economist), Food and Resource Economics, IFAS (1975-1975).

GURIN, SAMUEL, Ph.D. (Columbia University)
Professor of Biochemistry (1969-1973).

GUTTINGER, HELLEN IRELAND, Ed.D.
Associate Professor, P.K. Yonge Laboratory School (1968-1977).

GUY, ALBERT GLASGOW, Ph.D. (Carnegie - Mellon University)
*Professor of Materials Science and Engineering (1960-1960).**

GUY, JUDITH A., M.N. (University of Florida)
Instructor, College of Nursing (1977-1977).

GUZMAN, VICTOR L., Ph.D. (Cornell University)
Professor (Horticulturist), IFAS, Agricultural Research and Educational Center, Belle Glade

HAASE, RONALD WAYNE, B.Arch. (Univ. of Minnesota)
Associate Professor of Architecture (1977-1977).

HABAL, MUTAZ B., M.D. (American University of Beirut)
Associate Professor of Surgery (1974-1974).

HABECK, DALE HERBERT, Ph.D. (North Carolina State Univ.)
Professor (Entomologist), IFAS (1963-1967).

HACKEL, DANIEL R., M.S.
Assistant Professor of Journalism and Communications (1978-1978).

HACKETT, RAYMOND L., M.D. (University of Vermont)
Professor of Pathology and Chief of Laboratory Services, VAH (1962-1972).

HACKLER, RUTH NADINE, M.S. (Oklahoma State University)
Associate Professor (Extension Clothing Specialist), IFAS, (1969-1969).

HADLEY, RUFUS TILMON, B.S.B.A. (Univ. of North Carolina)
Director, Administrative Computing Services (1954-1969).

HAGSTRUM, DAVID WILLIAM, Ph.D. (University of California)
Assistant Professor (Assistant Entomologist), USDA, IFAS, 1973-1973).

HAHN, WILLIAM, M.A. (Michigan State University)
Director of Family Housing and Conferences, Division of Housing (1967-1977).

HALE, JAMES ALLEN, Ph.D. (University of Wisconsin)
Associate Professor (1975-1977).

HALE, JAMES PIERCE, M.S.
Professor of Music (1957-1970).

HALE, MARK PENDLETON, JR., Ph.D. (University of Illinois)
Associate Professor of Mathematics (1970-1976).

HALL, C. B., Ph.D. (Cornell University)
Professor (Horticulturist), IFAS (1950-1964).

HALL, DONALD W., Ph.D. (University of Florida)
Assistant Professor (Assistant Entomologist), IFAS (1975-1975).

HALL, EVERETT E., JR., Ph.D. (University of Florida)
Assistant Professor of Psychology (1962-1970).

HALL, JACK
Assistant Coach (1969-1969)

HALL, JADIE M., Ph.D. (Texas Women's University)
Assistant Dean for Student Services (1977-1977).

HALL, LINDA THORNTON, M.S.T. (Georgia Southern)
Assistant Professor of Recreation (1969-1969).

HALL, ROBERTA HALCOMB, M.S. (University of Alabama)
Associate Professor (Extension Home Furnishings Specialist), IFAS, (1959-1969).

HALLER, WILLIAM THURSTON, Ph.D. (University of Florida)
Assistant Professor (Assistant Agronomist), IFAS (1974-1974).

HALLIWELL, RICHARD E.W. Vet.M.B., Ph.D. (U. of Cambridge)
Associate Professor, College of Veterinary Medicine (1977-1977).

HALLMAN, CLEMENS L., Ph.D. (Indiana University)
Associate Professor of Education (1973-1973)

HALLMARK, CHARLES THOMAS, Ph.D. (Ohio State University)
Assistant Research Scientist of Soil Science, (Soil Genesis and Classification), IFAS (1977-1977).

HALPERIN, DON A., Ph.D. (Virginia Polytechnic Institute)
Professor of Building Construction and Director of the School of Building Construction (1953-1973).

HALSEY, LAWRENCE HENNRY, M.S.A. (University of Florida)
Associate Professor (Horticulturist), IFAS (1948-1968).

HAMACHER, HOWARD BROCKMAN, M.Arch. (University of Kansas)
Professor of Architecture (1956-1976).

HAMLEN, RONALD ALAN, Ph.D. (Pennsylvania State University)
Assistant Professor (Assistant Entomologist), IFAS, Agricultural Research Center, Apopka (1973-1973).

HAMMACK, JOSEPH LEONARD, JR., Ph.D. (Cal. Inst. of Tech.)
Associate Professor of Coastal and Oceanographic Engineering (1976-1977).

HAMMELL, DAVID LEE, Ph.D. (University of Kentucky)
Assistant Professor (Assistant Animal Nutritionist), IFAS, Agricultural Research Center, Live Oak (1973-1973).

HAMMER, LOWELL CLARK, Ph.D. (University of Florida)
Professor of Communicative Disorders and Speech; Associate Dean, College of Health Related Professions (1960-1975).

HAMMER, MARIE SPEYRER, M.H.Ec.Ed. (University of Arizona)
Associate Professor (Extension Home Economist-ENP), IFAS (1969-1975).

HAMMER, RICHARD HARTMAN, Ph.D. (University of Arizona)
Professor and Chairman, Department of Pharmaceutical Chemistry (1963-1971).

HAMMOND, EUGENE ASHBY, Ph.D. (University of North Carolina)
Professor of History and Social Sciences (1942-1955).

HAMMOND, LUTHER CARLISLE, Ph.D. (Iowa State University)
Professor of Soil Science (Soil Physics), IFAS (1950-1964).

HANCOCK, DONALD E., M.B.A. (University of Kentucky)
Director of Admissions and Financial Arrangements, Shands Teaching Hospital (1976-1976).

HANES, MICHAEL LINN, Ph.D. (Indiana University)
Associate Professor of Education (1973-1977).

HANKS, ROBERT WILLIAM, Ph.D. (University of Chicago)
Associate Professor (Associate Plant Physiologist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1955-1974).

HANNAH, LARKIN CURTIS, Ph.D. (University of Wisconsin)
Assistant Professor (Horticulturist), IFAS (1974-1974).

HANNUM, JOHN BALLARD, M.Ed. (University of Florida)
Instructor, P.K. Yonge Laboratory School (1958-1962).

HANRAHAN, ROBERT JOSEPH, Ph.D. (University of Wisconsin)
Professor of Chemistry (1958-1971)

HANSEN, ART, Ph.D. (Cornell University)
Assistant Professor of Behavioral Studies and Anthropology (1975-1975)

HANSEN, KIM A., M.B.A. (University of Florida)
Associate in Information Systems (1974-1974).

HANSON, HAROLD PALMER, Ph.D. (University of Wisconsin)
Executive Vice President and Professor of Physics (1948-1974).

HARBAUGH, BRENT KALEN, Ph.D. (Kansas State University)
Assistant Professor (Assistant Horticulturist), IFAS, Agricultural Research and Education Center, Bradenton (1975-1975).

HARDER, JAYNE CRANE, Ph.D. (University of Florida)
*Professor of Linguistics and Director of the English Language Institute (1954-1974).**

HARDMAN-DE-BAUTISTA, M.J., Ph.D. (Stanford University)
Professor of Anthropology and Linguistics (1968-1972).

HARDY, JOHN T., M.A. (University of Florida)
Major, U.S. Army, Assistant Professor of Military Science (1976-1976).

HARDY, JOHN WILLIAM, Ph.D. (University of Kansas)
Curator of Ornithology and Chairman of Natural Sciences, Florida State Museum; Joint Professor of Zoology and Latin American Studies (1971-1976).

HARGROVE, DON DARRELL, Ph.D. (University of Florida)
Assistant Professor (Department of Animal Science), IFAS (1973-1975).

HARING, ELLEN S., Ph.D. (Radcliffe College)
Professor of Philosophy and Chairperson of Department (1972-1972).

HARLAN, WILLIAM EDWARD, M.A.E.
Assistant Professor of Physical Education (1949-1954).

HARMAN, ELOISE M., M.D. (John Hopkins University)
Assistant Professor of Medicine (1976-1976).

HARMS, ROBERT HENRY, Ph.D. (Texas A & M University)
Professor (Poultry Nutritionist) and Chairperson, Poultry Science Department, IFAS (1957-1963).

HARPER, JULIA M., M.Ed. (Florida A & M)
Instructor, P.K. Yonge Laboratory School (1966-1970).

HARRELL, SIDNEY L., M.S. (Old Dominion University)
Assistant in Engineering in Coastal and Oceanographic Engineering (1974-1974)

HARRER, GUSTAVE ADOLPHUS, Ph.D. (University of North)
Director of Libraries (1968-1968).

HARRIS, BARNEY, JR., Ph.D. (Oklahoma State University)
Professor (Extension Dairyman), IFAS (1963-1974).

HARRIS, C. E., J.D. (University of Harvard)
Assistant Professor (1975-1975).

HARRIS, FAYE G., Ed.D. (University of Florida)
Associate Professor, College of Nursing (1975-1975).

HARRIS, JAMES O., M.D. (University of Mississippi)
Associate Professor of Medicine, VAH (1973-1976).

HARRIS, LAWRENCE DEAN, Ph.D. (Michigan State University)
Assistant Professor (Wildlife Ecologist), IFAS (1972-1972).

HARRIS, MICHAEL R., M.B.A., C.P.A. (Univ. of Florida)
Associate University Controller (1971-1974).

HARRISON, DALTON SIDNEY, M.S.A. (University of Florida)
Professor (Agricultural Engineer), IFAS (1953-1968).

HARRISON, MARY NALL, M.S. (Texas A&M University)
Associate Professor (Extension Consumer Education Specialist), IFAS, (1963-1967).

HARRISON, WILLARD L., M.S.P. (University of Florida)
Associate Professor of Pharmacy and Director, Shands Teaching Hospital Pharmacy (1976-1976).

HART, JACQUELYN D., Ed.S. (University of Florida)
Affirmative Action Officer (1974-1975).

HARTIGAN, BARRY, M.A. in L.S.
Assistant Librarian, Engineering and Physical Sciences (1973-1973).

HARTIGAN, KARELISA V., Ph.D. (University of Chicago)
Associate Professor of Classics (1973-1976).

HARTLEY, CRAIG SHERIDAN, Ph.D. (Ohio State University)
*Professor of Materials Science and Engineering (1966-1975).**

HARTY, RICHARD F., M.D. (Georgetown University)
Assistant Professor of Medicine (1977-1977).

HARVEY, JOHN W., D.V.M. (Kansas St. U.) Ph.D. (U. Cal.-Davis)
Assistant Professor of Clinical Pathology, College of Veterinary Medicine (1974-1974).

HASKINS, JAMES S., M.A. (University of New Mexico)
Associate Professor of English (1977-1977).

HASS, CHARLES GLEN, Ed.D. (Columbia University)
Professor of Education and Chairman Instructional Leadership and Support (1958-1958).

HASS, JANE, Ph.D. (University of South Carolina)
Assistant Professor of Management (1975-1975).

HATFIELD, KENNETH, B.S., B.A.
Assistant Coach (1971-1971).

HATTON, THURMAN TIMBROOK, JR., Ph.D. (Washington State University)
Adjunct Professor (Horticulturist), USDA, IFAS, (1972-1972).

HAULMAN, STEPHEN R., M.Ed. (University of Florida)
Assistant Director of Housing, Student Housing (1968-1977).

HAUPT, CHARLES S., B.S.P.
Continuing Education Coordinator, College of Pharmacy (1950-1974).

HAUSWIRTH, WILLIAM W., Ph.D. (Johns Hopkins University)
Assistant Professor of Immunology and Medical Microbiology (1976-1976).

HAWKINS, IRVIN F., M.D. (University of Maryland)
Professor of Radiology and Chief of Visceral Angiography (1973-1976).

HAWKINS, ROBERT A., M.A. (University of Florida)
Teacher, P. K. Yonge Laboratory School (1969-1970).

HAWKINSON, LANCE JON, M. Arch. (University of Florida)
Assistant Professor of Architecture (1970-1973).

HAYES, CAROL VIRGINIA, M.E.D. (University of Florida)
*Associate Professor, College of Nursing (1957-1977).**

HAYGOOD, NANCY A., B.S.B.A. (Univ. of Arizona)
*Associate Professor, College of Nursing (1957-1977).**

HAYNES, RICHARD PIERCE, Ph.D. (University of Illinois)
Associate Professor of Philosophy (1967-1967).

HAYS, CLIFFORD OLIVER, Ph.D. (University of Texas)
Associate Professor of Civil Engineering (1971-1976).

HAYSLIP, NORMAN CALVIN, B.S.A. (University of Florida)
*(1943-1956).**

HEAD, HENRY HERBERT, Ph.D. (University of Maryland)
Associate Professor (Animal Physiologist), IFAS (1963-1971).

HEADLEY, ELWOOD J., M.D. (Vanderbilt University)
Assistant Professor of Medicine, & Associate Chief of Staff for Education, VAH (1976-1976).

HEANEY, JAMES PATRICK, Ph.D. (Northwestern University)
Associate Professor of Environmental Engineering Sciences (1968-1972).

HEARN, DONALD WILLIAMS, Ph.D. (Johns Hopkins University)
Associate Professor of Industrial and Systems Engineering (1971-1976).

HEARON, PAMELA KUNSMAN, B.S.
(Assistant Librarian) Assistant Professor, IFAS, Agricultural Research and Educational Center, Lake Alfred, (1966-1967).

HEATON, MARIETA B., Ph.D. (North Carolina State University)
Assistant Professor of Neuroscience (1975-1975).

HEDDEN, SCOTT L., M.S.
Adj. Associate Professor (Associate Agricultural Engineer), IFAS USDA. AREC-Lake Alfred (1963-1968). Alfred (1963-1968).

HEDGECOCK, CRAIG ROBERT, M.S. (University of Cincinnati)
Assistant in Engineering (1977-1977).

HEDGES, WILLIAM DEPEW, Ed.D. (George Peabody College for Teachers)
Professor of Education (1971-1971).

HEGGESTAD, ARNOLD A., Ph.D. (Michigan State University)
Chairman, Department of Finance, Insurance, and Real Estate & Associate Professor of Finance and Economics (1975-1977).

HEILMAN, KENNETH M., M.D. (University of Virginia)
Professor of Neurology, Director of Neurology Research Program, and Associate Professor of Psychology (1970-1975).

HEINS, PAUL J., D.D.S., M.S.D. (University of Washington)
Associate Professor and Chairman of Periodontics, College of Dentistry (1975-1975).

HELLING, JOHN FREDERICK, Ph.D. (Ohio State University)
Associate Professor of Physical Sciences and Chemistry (1962-1972).

HELLSTROM, WARD, Ph.D. (University of Illinois)
Professor of English and Chairperson of the Department (1961-1971).

HELTON, CHARLES KIM, B.A.
Assistant Football Coach (1973).

HEMP, GENE WILLARD, Ph.D. (University of Minnesota)
Associate Vice President for Academic Affairs and Professor of Engineering Sciences (1967-1976).

HENCH, LARRY LEROY, Ph.D. (Ohio State University)
Professor of Materials Science and Engineering (1964-1972).

HENDERSON, CHARLES ALFRED, Ed.D. (University of Florida)
Associate Professor of Education (1964-1974).

HENDERSON, DOLORES CHRISTINA, M.S.
Assistant Librarian, Reference and Bibliography (1973-1976).

HENDERSON, GRACE G., Ph.D. (Michigan State University)
Assistant Professor of Sociology (1973-1973).

HENDERSON, LINDA L., Ed.S. (University of Florida)
Teacher, P. K. Yonge (1974-1975).

HENDERSON, RONALD D., Ph.D. (Michigan State University)
Assistant Professor of Sociology (1973-1973).

HENDERSON, RUBY MARIE, M.S.
Associate Professor of Music (1963-1974).

HENLEY, RICHARD WILLIAM, Ph.D. (Ohio State University)
Associate Professor (Ornamental Horticulturist) Ornamental Horticulture Department Agriculture Research Center-Apopka (1973-1973).

HENNY, RICHARD JAY, Ph.D. (University of Minnesota)
Assistant Professor (Geneticist, Foliage Plant Breeder), IFAS, Agricultural Research Center, Apopka (1976-1976).

HENRETTA, JOHN C., Ph.D. (Harvard University)
Assistant Professor of Sociology (1976-1976).

HENRY, FREDERICK EARL, B.I.E. (Georgia Institute of Technology)
Assistant Professor (Assistant Industrial Engineer), USDA, IFAS (1966-1966).

HENRY, GEORGE SELDON, Ph.D. (Yale University)
Assistant Professor of History (1961-1967).

HENRY, JAMES A., M.S.
Interim Assistant Professor of Physical Sciences & Geography (1977-1977).

HENRY, RICHARD A., M.D. (Johns Hopkins Medical School)
Professor of Community Health and Family Medicine (1970-1976).

HENSEL, DALE ROBERT, Ph.D. (Rutgers University)
Professor (Soils Chemist) and Center Director, IFAS, Agricultural Research Center, Hastings, (1960-1970).

HENSEL, JAMES W., Ph.D. (Iowa State University)
Professor of Education (1969-1975).

HENTGES, JAMES FRANKLIN, JR., Ph.D. (University of Wisconsin)
Professor (Animal Nutritionist), IFAS (1952-1966).

HERBERT, JOHN HENRY, M.S.A.
Associate Professor of Soil Science (Extension Conservation), IFAS, (1954-1968).

HERBERT, THOMAS WALTER, Ph.D. (Princeton University)
Professor of English (1946-1951).

HERON, W. DAVID, B.S.B.A. C.P.A. (Univ. of Florida)
Assistant Director of Finance and Accounting (1973-1974).

HESS, NANCY ROSE, Ph.D. (University of Wisconsin)
Associate Professor of Marketing (1963-1966).

HESTER, JOHN DONALD, M.P.H. (University of Florida)
Associate Professor of Recreation (1957-1976).

HETRICK, LAWRENCE ANDREW III, M.A. (University of Florida)
Assistant Professor of English (1966-1968).

HETRICK, VIRGINIA R., Ph.D. (University of Washington)
Assistant Professor of Geography (1973-1973).

HEWITT, TIMOTHY D., M.S. (University of Tennessee)
Assistant Professor, Food & Resource Economics, IFAS, AREC, Marianna (1977-1977).

HICKS, DORA ADELINE, Ed.D. (University of Texas)
Professor of Health Education (1948-1955).

HIEBERT, ERNEST, Ph.D. (Purdue University)
Associate Professor (Associate Plant Pathologist), IFAS, (1969-1974).

HIERS, RICHARD HYDE, Ph.D. (Yale University)
Professor of Religion (1961-1972).

HILDEBRANDT, WILLIAM KENNETH, B.S.P. (University of Florida)
Assistant in Pharmacy (1976-1976).

HILL, CLEMENT J., D.D.S. (Univ. of Louisville)
Associate Professor of Pediatric Dentistry (1975-1975).

HILL, DAVID THOMAS, Ph.D. (Clemson University)
Assistant Professor (Assistant Agricultural Engineer), IFAS (1975-1975).

HILL, ELMER C., B.S.A.
Adjunct Associate Professor (Associate Bacteriologist) IFAS, DC, AREC-Lake Alfred (1951-1963).

HILL, HUGH M., M.D. (Johns Hopkins University)
Professor of Obstetrics and Gynecology and Associate Dean for Student Admissions (1959-1973).

HILL, JERALDINE A., M.Ed. (University of Florida)
Instructor, P. K. Yonge Laboratory School (1959-1964).

HILL, MILDRED B., Ph.D. (University of Illinois)
Associate Professor of English, and Assistant Dean of Graduate School (1974-1977).

HILL, SAMUEL SMYTHE, JR., Ph.D. (Duke University)
Professor of Religion (1972-1972).

HILLIARD, FRANCES PAULINE, Ed.D. (Columbia University)
*Professor of Education (1950-1960).**

HILLIARD, MARY ELIZABETH, Ph.D. (University of Florida)
Professor, College of Nursing (1973-1976).

HILLING, HELEN CLARK, Ph.D. (New York University)
Professor of Community Health and Family Medicine (1974-1974).

HILTON, MAYNARD B., JR., M.B.A. (Inter American University)
Captain, U.S. Air Force, Assistant Professor of Aerospace Studies (1975-1975).

HIMES, JAMES ALBERT, V.M.D. (University of Pennsylvania)
Professor (Pharmacologist), and Assistant Dean for students, College of Veterinary Medicine-IFAS (1965-1976).

HINES, VYNCE ALBERT, Ed.D. (University of Illinois)
Professor of Education (1947-1953).

HINKLEY, HENRY R.
Coordinator, Health Center Projects, Facilities Planning and Operations, J. Hills Miller Health Center (1976-1976).

HINSON, KUELL, Ph.D. (University of Wisconsin)
Professor of Agronomy (Geneticist, USDA), IFAS (1955-1971).

HIPPLE, THEODORE W., Ph.D. (University of Illinois)
Professor of Education (1968-1973)

HIRTH, DAVID HAMMOND, Ph.D. (University of Michigan)
Assistant Professor, Wildlife Ecology, IFAS (1973-1973).

HIXSON, IMOGENE, B.S. in L.S.
Librarian and Chairman of Catalog Department (1949-1970).

HODGES, ELVER MYRON, Ph.D. (Rutgers University)
*Professor (Agronomist), IFAS, Agricultural Research Center, ONA (1941-1949).**

HODGES, JAMES R., Ph.D. (University of North Carolina)
Professor of Humanities and English (1950-1971).

HODGES, JULIUS BARNEY, Ed.D. (New York University)
Professor of Education and Director, P.K. Yonge Laboratory School (1962-1962).

HODGES, PAUL C., Ph.D. (University of Wisconsin)
Visiting Professor of Radiology (1964-1974).

HODGSON, THOM JOEL, Ph.D. (University of Michigan)
Associate Professor of Industrial and Systems Engineering (1970-1974).

HOFFMAN, GLENN JOHN, Ph.D. (University of Michigan)
Associate Professor of Social Sciences and History (1957-1963).

HOFFMANN, EDWARD M., Ph.D. (University of Miami)
Associate Professor, Microbiology and Cell Science, IFAS, Associate Professor, Immunology and Medical Microbiology, College of Medicine (1968-1972).

HOFLUND, GAR B., Ph.D. (University of California, Berkeley)
Assistant Professor of Chemical Engineering (1977-1977).

HOFSESS, PAUL W., D.M.D. (Col. of Med. & Dent. of New Jersey)
Assistant Professor of Dental Biomaterials, College of Dentistry (1977-1977).

HOGEN ESCH, THEO ELTIO, Ph.D. (Leiden)
Associate Professor of Chemistry (1970-1975).

HOLBROOK, HOLLIS HOWARD, B.F.A.
Professor of Art (1938-1948).

HOLDEN, EDMUND STANLEY, Ph.D. (Northwestern University)
Associate Professor of English (1957-1966).

HOLLAND, DONALD R., M.S.
Associate Professor of Journalism and Communications (1970-1977).

HOLLAND, HAROLD FERRELL, M.S.C.E. (University of Florida)
Associate Professor of Building Construction (1968-1973).

HOLLIEN, HARRY, Ph.D. (University of Iowa)
Professor of Speech (1962-1968).

HOLLINGER, THOMAS G., Ph.D. (Purdue University)
Assistant Professor of Anatomy (1976-1976).

HOLLIS, CHARLES A. III, Ph.D. (SUNY, College of Forestry)
Associate Professor (Associate Forest Physiologist), IFAS (1972-1977).

HOLLOMAN, WILLIAM, Ph.D. (University of California)
Assistant Professor of Immunology and Medical Microbiology (1977-1977).

HOLMES, THELMA MARY, M.P.H. (University of North Carolina)
Associate Professor of Physical Therapy (1965-1969).

HOLSTRUM, GARY L., Ph.D. (University of Iowa), C.P.A. (Texas)
Associate Professor of Accounting (1974-1974).

HOLT, JOHN, Ph.D. (Texas A&M University)
Associate Professor, Food and Resource Economics Department, IFAS, (1962-1974).

HOLYOAK, OWEN JOSEPH, Ph.D. (University of Iowa)
Professor and Acting Chairman, Department of Professional Physical Education (1966-1977).

HOLZER, CHARLES E., Ph.D. (University of Florida)
Assistant Professor of Sociology in Psychiatry (1968-1977).

HOMAN, SIDNEY RAMSDEN, Ph.D. (Harvard University)
Associate Professor of English (1972-1972).

HOOD, C. IAN, M.B., Ch.B. (Liverpool University)
Professor of Pathology (1956-1973).

HOOKS, E. JAMES, Ph.D. (University of Missouri)
Associate Professor and Chairperson of Theatre (1973-1977).

HOOKS, R. CLEGG, M.A.M.R.D. (University of Florida)
Assistant in Agricultural Economics, Food & Resource Economics, IFAS (1976-1976).

HOOPER, CHARLES FREDERICK, JR., Ph.D. (Johns Hopkins Univ.)
Professor of Physics (1963-1976).

HOOPER, LEONARD J., Ph.D. (Southern Illinois University)
Professor of Journalism and Communications (1964-1977).

HOOVER, JOHN WESLEY, M.S.A.E. (Georgia Institute of Technology)
Professor of Engineering Sciences (1951-1967).

HOPKINS, DONALD LEE, Ph.D. (University of Kentucky)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research Center, Leesburg (1969-1974).

HORNER, EARL STEWART, Ph.D. (Cornell University)
Professor of Agronomy, IFAS (1950-1964).

HORNSBY, JANICE MARIE, M.Ed. (University of Houston)
Visiting Instructor of Medical Technology (1975-1975).

HOROWITZ, ANN R., Ph.D. (Indiana University)
Associate Professor of Economics (1972-1972).

HOROWITZ, IRA, Ph.D. (Massachusetts Institute of Technology)
Professor of Management; Acting Chairperson, Department of Management (1972-1972).

HORTENSTINE, CHARLES C., Ph.D. (University of Florida)
*Professor of Soil Science (Soil Chemistry), IFAS (1959-1975).**

HOUGH, JOSEPH P., B.S.B.A. (Florida State University)
University Controller (1962-1970).

HOULDEN, PAULINE J., Ph.D. (University of North Carolina)
Assistant Professor of Psychology and Criminal Justice (1977-1977).

HOUSE, MICHAEL LAMAR, B.S.P. (University of Florida)
Assistant in Pharmacy (1975-1977).

HOWARD, CHARLES MARION, Ph.D. (Cornell University)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research Center, Dover (1967-1973).

HOWARD, FORREST WILLIAM, Ph.D. (Louisiana State University)
Assistant Professor (Assistant Entomologist), IFAS Agricultural Research Center, Ft. Lauderdale (1976-1976).

HOWARD, WILLIAM M., Ph.D. (University of Wisconsin)
Professor of Insurance and Finance (1955-1957).

HOWELL, GARY L., B.S. (University of Florida)
Assistant in Engineering in Coastal and Oceanographic Engineering (1976-1976)

HOWER, ALFRED, Ph.D. (Harvard University)
Professor of Portuguese and Spanish (1962-1962).

HREN, JOHN JOSEPH, Ph.D. (Stanford University)
Professor of Materials Science and Engineering (1964-1972).

HSIEH, CHUNG KUO, Ph.D. (Purdue University)
Associate Professor of Mechanical Engineering (1969-1973).

HUBBELL, DAVID HEUSTON, Ph.D. (North Carolina State University)
Associate Professor of Soil Science (Soil Microbiology), IFAS (1969-1973).

HUBER, JOSEPH RICHARD, M.Ed. (George Washington University)
Instructor, P.K. Yonge Laboratory School (1958-1962).

HUBER, WAYNE CHARLES, Ph.D. (MIT)
Associate Professor of Environmental Engineering Sciences (1968-1973).

HUDSON, JERE H., M.S.I.A.* (George Washington University)
Assistant Dean and Lecturer, College of Law (1972-1972).

HUDSON, TERRY M., M.D. (Duke University)
Assistant Professor of Orthopaedic Radiology (1976-1976).

HUETIEL, MILTON DAVIS, Ph.D. (University of Texas)
Assistant Professor (Assistant Entomologist), USDA, IFAS, (1973-1973).

HUFFMAN, JACOB BRAINARD, D.F. (Duke University)
Associate Professor (Wood Technologist), IFAS (1952-1957).

HUGGART, RICHARD L., B.S.
Adjunct Associate Professor (Associate Chemist), IFAS, DC, AREC-Lake Alfred (1951-1961).

HUGHES, KENNETH BURDETTE, S.J.D. (Harvard University)
Professor of Law (1968-1968).

HUGHES, THOMAS W., B.A. (Pennsylvania St. University)
Director, Veterinary Medical Teaching Hospital, College of Veterinary Medicine (1973-1976).

HUMMEL, ROLF ERICH, D.Sc. (Stuttgart, Germany)
Professor of Materials Science and Engineering (1964-1974).

HUMPHREY, STEPHEN R., Ph.D. (Oklahoma State University)
Associate Curator of Mammology, Florida State Museum, Joint Associate Professor of Zoology and Latin American Studies (1971-1976).

HUMPHREYS, THOMAS ELDER, Ph.D. (University of Pennsylvania)
Professor of Botany (Biochemist), IFAS (1955-1968).

HUNT, E. L. ROY, LL.M. (Yale)
Professor of Law and Associate Dean (1962-1971).

HUNTER, DENNIS H., Ph.D. (Colorado State University)
Assistant Professor, (Range Ecosystem Management), IFAS (1976-1976).

HURST, THOMAS ROBERT, J.D. (Harvard University)
*Associate Professor of Law (1974-1977).**

HUSEMAN, HOWARD WILLIAM, M.S. in L.S.
Associate Librarian, Executive Assistant to Director, (1962-1972).

HVIZDALA, EVA V., M.D. (Charles University, Prague)
Assistant Professor of Pediatrics (1975-1975).

HYATT, DORIS, Y., B.S.
Associate Librarian, Reference and Bibliography (1967-1977).

HYDE, DALLAS M., Ph.D. (University of California at Davis)
Assistant Professor, College of Veterinary Medicine (1976-1976).

HYDE, GERALD E., B.S. (University of Tennessee)
Systems Coordinator (1974-1975).

IBARRA, FERNANDO, Ph.D. (UCLA)
Associate Professor of Spanish (1967-1972).

IHAS, GARY G., Ph.D. (University of Michigan)
Assistant Professor of Physics (1976-1976).

INDELICATO, PETER A., M.D. (New York Medical College)
Assistant Professor of Orthopaedic Surgery and Chief of Sports Medicine (1977-1977).

INGBER, STANLEY N., J.D. (Yale University)
Associate Professor of Law (1972-1976).

INGLEY, HERBERT ARTHUR, III, Ph.D. (University of Florida)
Assistant Professor of Mechanical Engineering (1973-1975).

INGMAN, HAL MAURY, M.S.M.A. (Georgia Tech.)
Assistant Professor of Mechanical Engineering (1961-1961).

INGRAM, LONNIE O'NEAL, Ph.D. (University of Texas)
Associate Professor, Microbiology and Cell Science, IFAS, Associate Professor, Immunology and Medical Microbiology, College of Medicine (1972-1976).

IRAVANI, ABDOLLAH, M.D. (Tehran University Medical School)
Instructor of Pediatrics (1977-1977).

IREY, RICHARD KENNETH, Ph.D. (Purdue University)
Professor of Mechanical Engineering (1964-1969).

IRVING, JO ANNALEE, M.S.N. (University of Maryland)
Assistant Professor, College of Nursing (1970-1971).

ISAACSON, MARCIA JEAN, M.F.A.
Assistant Professor of Art (1973-1975).

ISAACSON, ROBERT L., Ph.D. (University of Michigan)
Graduate Research Professor of Psychology and Neuroscience (1968-1977).

ISENBERG, SHELDON R., Ph.D. (Harvard)
Associate Professor of Humanities and Religion (1973-1976).

ISLER, RALPH CHARLES, Ph.D. (Johns Hopkins University)
Professor of Physics (1966-1976).

ISMAIL, MOHAMMED ABDEL-REHIM, Ph.D. (University of Florida)
Adjunct Assistant Professor (Assistant Horticulturist) IFAS, DC, AREC-Lake Alfred (1966-1968).

IVES, JOHN E., M.H.A. (Yale University)
Executive Director, Shands Teaching Hospital & Clinics (1977-1977).

JABERG, RUSSELL LOWELL, S.T.D. (Temple University)
Associate Professor of Humanities (1968-1973).

JACKSON, ERIC, Ph.D. (University of Pittsburgh)
Associate Professor of Basic Dental Sciences, College of Dentistry (1973-1977).

JACKSON, LARRY KEITH, Ph.D. (University of Florida)
Assistant Professor of Fruit Crops (Assistant Horticulturist), IFAS (1963-1972).

JACKSON, LELAND F., Ph.D. (University of California, Davis)
Assistant Professor of Plant Pathology, IFAS (1977-1977).

JACKSON, RICHARD A., M.Ed. (University of Florida)
Teacher, P. K. Yonge Laboratory School (1972-1972).

JACKSON, RONALD FREDERICK, D.V.M. (Michigan State Univ.)
Clinical Professor of Veterinary Medicine (1971-1974).

JACKSON, WILLIAM FRANKLIN, D.V.M., M.S. (Michigan State University)
Clinical Professor of Veterinary Medicine (1971-1974).

JACOBS, ARTHUR J., Ed.D. (Columbia University)
Associate Professor of Journalism and Communications (1964-1973).

JAEGER, INA CLAIRE, M.M.
Associate Professor of Music (1968-1974).

JAEGER, MARC J., M.D. (University of Berne, Switzerland)
Professor of Basic Dental Sciences, College of Dentistry, & Professor of Physiology, College of Medicine (1970-1975).

JAMES, JOHN H., D.B.A. (University of Indiana)
Associate Professor of Management (1961-1964).

JAMES, SUE H., M.Ed. (University of Florida)
Residence Life Coordinator, Student Housing (1968-1973).

JANES, MELVIN JOSEPH, Ph.D. (Iowa State University)
Associate Professor (Associate Entomologist), IFAS Agricultural Research and Education Center, Belle Glade (1967-1972).

JANICKI, LAWRENCE JOHN, M.S. (University of Florida)
Assistant in Research, International Programs, IFAS, Bolivia (1971-1975).

JANKY, DOUGLAS MICHAEL, Ph.D. (University of Nebraska)
Assistant Professor (Assistant Poultry Products Technologist), IFAS, (1974-1974).

JAROSZEWICZ, MARK T., A.I.A., M. Arch (Swiss Fed. Inst. Tech.)
Dean and Professor of Architecture (1976-1976).

JENNINGS, ROBERT BENJAMIN, J.D. (University of Florida)
Associate Professor of Business Law, College of Business Administration (1957-1974).

JENSEN, ANTHONY SVEND, M.S.F. (University of Florida)
Associate Professor (Extension Forester), IFAS (1953-1977).

JENSEN, PAUL J., Ph.D. (University of Iowa)
Professor, Department of Speech (1963-1975).

JERNIGAN, JAMES A., M.D. (Washington University, St. Louis)
Assistant Professor of Community Health and Family Medicine and Medicine (1974-1976).

JESSE, RICHARD R., JR., Ph.D. (Cornell University)
*Assistant Professor of Management (1972-1972).**

JESTER, ROBERT E., Ph.D. (University of Utah)
Associate Professor of Education (1966-1969).

JILEK, ANTHONY FRANCIS, Ph.D. (University of Florida)
Assistant Professor (Extension Area Beef Specialist) IFAS (1973-1975).

JOHNS, LEWIS E., JR., Ph.D. (Carnegie Institute of Technology)
Associate Professor of Chemical Engineering (1967-1972).

JOHNSON, CHARLES ROBERT, Ph.D. (Oregon State University)
Associate Professor (Associate Ornamental Horticulturist), IFAS (1973-1976).

JOHNSON, F. CLIFFORD, Ph.D. (University of Texas)
Professor of Zoology (1967-1973).

JOHNSON, FREDDIE A., Ph.D. (University of Florida)
Assistant Professor (Extension Entomologist), IFAS (1973-1975).

JOHNSON, GORDAN S., B.A., A.I.A.
University Physical Planning Consultant, Facilities Planning and Operations, J. Hillis Miller Health Center (1968-1973).

JOHNSON, HOLLY ANNE, M.S.L.S. (Case W. Reserve University)
Assistant Librarian, Architecture and Fine Arts Branch Library (1976-1976).

JOHNSON, IRMGARD, Ph.D. (University of Denver)
Professor of Humanities (1955-1967).

JOHNSON, JAMES TROY, Ph.D. (Virginia Polytechnic Institute)
Associate Professor (Associate Agronomist) and Center Director Agricultural Research Center, Live Oak, IFAS, (1974-1975).

JOHNSON, LATHROP PARK, Ph.D. (Johns Hopkins University)
Assistant Professor of German (1974-1974).

JOHNSON, LEROY-RONALD, M.A. (The Sorbonne)
Interim Assistant Professor of Social Sciences (1977-1977).

JOHNSON, LOYS ALMON, M.S.C.E. (University of Wisconsin)
Professor of Building Construction (1960-1964).

JOHNSON, RALPH E., M.D. (Northwestern University)
Professor of Radiation Therapy (1977-1977).

JOHNSON, RAYMOND CLARENCE, M.S.E.
Professor of Electrical Engineering and Director of Electronic Communications Laboratory (1946-1968).

JOHNSON, ROBERT WILLIAM, M.S. (Michigan State University)
Associate Professor of Soil Science (USDA Soil Scientist), IFAS (1974-1974).

JOHNSON, SIMON OTIS, Ed.D. (Indiana University)
Associate Professor of Education (1971-1976).

JOHNSON, SUSAN MARJAMAA, Ph.D. (University of Texas)
Assistant Professor of Pharmacy (1975-1975).

JOHNSON, SUZANNE B., Ph.D. (SUNY - Stony Brook)
Assistant Professor of Clinical Psychology (1975-1976).

JOHNSTON, DAVID WARE, Ph.D. (University of California)
Professor of Zoology (1963-1974).

JOHNSTON, J. M., Ph.D. (University of Florida)
Associate Professor of Psychology (1975-1975).

JOHNSTON, OTTO W., Ph.D. (Princeton University)
Associate Professor of German (1969-1972).

JOHNSTON, PATRICIA A., M.S. in L.S
Assistant Librarian, Documents (1974-1974).

JOINER, JAMES G., Ph.D. (University of Alabama)
Associate Professor in Rehabilitation Counseling (1972-1977).

JOINER, JASPER NEWTON, Ph.D. (Ohio State University)
Professor (Ornamental Horticulturist), IFAS (1950-1966).

JONES, BRENDA F., M.R.C.
Assistant in Broadcasting in Journalism and Communications (1977-1977).

JONES, DAVID WILSON, M.S.A.
Professor of Agronomy, IFAS (1946-1971).

JONES, ERNEST McCLAIN, J.S.D. (Yale University)
Professor of Law (1954-1957).

JONES, ESTHER J., M.L.M.
Associate Librarian, J. Hillis Miller Health Center Library (1970-1975).

JONES, JACK S., D.M.D. (University of Kentucky)
Assistant Professor of Community Dentistry, College of Dentistry (1975-1975).

JONES, JAMES WIGINGTON, Ph.D. (North Carolina State Univ.)
Associate Professor (Associate Agricultural Engineer), IFAS (1977-1977).

JONES, JESSE RAY, JR., M.A. in L.S.
Librarian, Reference and Bibliography (1961-1975).

JONES, JOHN PAUL, Ph.D. (Ohio State University)
Professor (Plant Pathologist), IFAS, Agricultural Research and Educational Center, Bradenton (1958-1970).

JONES, JOHN PAUL, JR., M.A.
Professor and Dean Emeritus of Journalism and Communications (1948-1977)

JONES, OTIS P., JR., B.S. (Florida State University)
Director, Auxiliary Services (1967-1967).

JONES, RAMSAY O., M.L.S. (Emory University)
Assistant Librarian (1971-1977).

JONES, WILLIAM MAURICE, Ph.D (Univ. of Southern California)
Professor of Chemistry (1956-1965).

JORDAN, VIRGINIA GOODELL, M.Ed. (University of Florida)
Assistant Professor of Medical Technology (1967-1967).

JOYCE, PETER H., M.D. (Trinity College)
Instructor of Radiology, VAH (1976-1976).

JUERGENSMEYER, JULIAN C., J.D. (Duke University)
Professor of Law (1972-1972).

JULIN, JOSEPH R., J.D. (Northwestern University)
Professor of Law and Dean, College of Law (1971-1971).

JULIUS, RICHARD L., M.D. (University of Florida)
Assistant Professor of Pediatrics and Medical Director, Gainesville Sunland Training Center (1970-1973).

JUNCOS, LUIS I., M.D. (National University of Argentina)
Associate Professor of Medicine, VAH (1972-1976).

KADZIELAWA, KRZYSZTOF, M.D., Ph.D. (Academy of Medicine, Warsaw)
Associate Professor of Pharmacology and Therapeutics (1976-1976).

KAFOGLIS, MILTON Z., Ph.D. (Ohio State University)
*Professor of Economics (1958-1968).**

KAHRS, ROBERT F., D.V.M., Ph.D. (Cornell University)
Professor and Chairman, College of Veterinary Medicine (1977-1977).

KAISER, BARBARA M., M.Ed. (University of Florida)
Teacher, P.K. Yonge (1975-1975).

KAISER, WILLIAM FRANCIS, M.B.A.
Associate Engineering in Electrical Engineering (1969-1976).

KALCH, LESTER WILCOX, M.Ag.
Associate Professor (Associate Extension Poultryman), IFAS, (1951-1968).

KALLENBACH, ERNST A., Ph.D. (McGill University)
Associate Professor of Anatomy (1963-1976).

KALLMAN, ROBERT RICHARD, Ph.D. (Massachusetts Institute of Technology)
Professor of Mathematics (1972-1976).

KALMAN, RUDOLF E., D.Sc. (Columbia University)
Graduate Research Professor of Mathematics, Electrical Engineering, Industrial and Systems Engineering, and Engineering Sciences (1971-1971).

KALMBACHER, ROBERT S., Ph.D. (Pennsylvania State University)
Assistant Professor (Assistant Agronomist), Agricultural Research Center, ONA, IFAS (1975-1975).

KALRA, SATYA PAUL, Ph.D. (University of Delhi, India)
Associate Professor of Obstetrics and Gynecology (1971-1976).

KALRA, PUSHPA S., Ph.D. (University of Delhi)
Assistant Professor of Obstetrics and Gynecology (1975-1976).

KANTER, LAWRENCE, M.D. (Case-Western Reserve)
Assistant Professor of Medicine, JHEP (1977-1977).

KANTOWSKI, ELEANORE L., Ed.D. (University of Georgia)
Assistant Professor of Education (1974-1974).

KARLAN, MARC S., M.D. (University of Pennsylvania)
Assistant Professor of Surgery (1975-1975).

KARP, GERALD C., Ph.D. (University of Washington)
Associate Professor, Microbiology and Cell Science, IFAS (1971-1976).

KAUDE, JURI VELLO, M.D. (University of Kiel)
Professor of Radiology (1971-1971).

KAUFMANN, DAVID ALLEN, Ph.D. (University of Iowa)
Associate Professor of Professional Physical Education (1970-1974).

KAUFMANN, JOHN HENRY, Ph.D. (University of California)
Professor of Zoology (1963-1974).

KEEFER, DENNIS RALPH, Ph.D. (University of Florida)
Associate Professor of Engineering Sciences (1963-1972).

KEENE, BEVERLY A., M.N. (University of Washington)
Director of Nursing Services, Shands Teaching Hospital and Clinics (1973-1975).

KEESLING, JAMES EDGAR, Ph.D. (University of Miami)
Professor of Mathematics (1967-1975).

KEETER, AUDREY, M.N. (University of Florida)
Assistant Professor, College of Nursing (1967-1969).

KEIG, NORMAN GUTHRIE, Ph.D. (Ohio State University)
Associate Professor of Economics (1963-1966).

KEISTER, ELWOOD J., Ed.D. (Columbia University)
Professor of Music (1957-1963).

KEITT, ALAN S., M.D. (Harvard University)
Associate Professor of Pathology and Medicine, Head of Hematology Division (1968-1975).

KELLER, OLIVER J., M.A. (N. Illinois University)
Visiting Professor of Criminal Justice (1975-1975).

KELLNER, KENNETH R., M.D., Ph.D. (SUNY-Downstate Med. Center)
Instructor of Obstetrics and Gynecology (1977-1977).

KELLY, DANIEL LEO, Ed.D. (University of Florida)
Associate Professor of English (1965-1973).

KELLY, EARL McNEIL, Ph.D. (Florida State University)
Professor (Extension District Agent), IFAS, (1949-1969).

KELLY, J. F., Ph.D. (University of Wisconsin)
Professor and Chairperson, Vegetable Crops Department, IFAS (1972-1972).

KELSO, WILLIAM A., Ph.D. (University of Wisconsin)
Assistant Professor of Political Science (1973-1973).

KELTING, ROBERT HERMAN, Ph.D. (University of Wisconsin)
Assistant Professor of Real Estate and Urban Analysis (1975-1975).

KEM, CAROL RITZEN, M.S. in L.S.
Associate Librarian Reference and Bibliography (1972-1977).

KEM, WILLIAM R., Ph.D. (University of Illinois)
Assistant Professor of Basic Dental Sciences, College of Dentistry, & Assistant Professor of Pharmacology and Therapeutics, College of Medicine (1971-1971).

KEMKER, FRANCIS JOSEPH, Ph.D. (University of Denver)
Associate Professor of Communicative Disorders (1977-1977).

KEMP, HAROLD WARREN, M.S. (University of Illinois)
Associate Professor of Architecture (1966-1971).

KENDALL, KENNETH EVERETT, Ph.D. (University of Florida)
Associate Professor of English (1965-1970).

KENDALL, ROBERT L., Ph.D. (Indiana University)
Assistant Professor of Journalism and Communications (1974-1975).

KENNEDY, DANIEL J., III, M.S.L.S.
Assistant Librarian, Reference and Bibliography (1977-1977).

KENNY, LAWRENCE W., B.A. (Wesleyan University)
Assistant Professor of Economics (1975-1975).

KENT, KURT E., Ph.D. (University of Minnesota)
Associate Professor of Journalism and Communications (1970-1976).

KEPNER, KARL W., Ph.D. (Ohio State University)
Professor (Extension Economist, Marketing), Food and Resource Economics, IFAS (1976-1976).

KERR, STRATTON HORSBURG, Ph.D. (Cornell University)
Professor (Entomologist), IFAS (1953-1968).

KEROACK, ROGER R., Ph.D. (University of Florida)
Clinical Psychologist (1977-1977).

KERSHNER, RICHARD B., Ph.D. (Stanford University)
Associate Professor of English (1971-1976).

KERSLAKE, KENNETH ALVIN, M.F.A.
Professor of Art (1956-1974).

KESTERSON, JAMES WALTER, M.S.
Professor (Chemist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1947-1956).

KHE, CHAU VAN, Ph.D. (University of California)
Assistant Professor (Assistant Agricultural Engineer), IFAS (1975-1975).

KHURI, ANDRE I., Ph.D. (Virginia Polytechnic Institute & State University)
Assistant Professor of Statistics (1976-1976).

KIDDER, GERALD, Ph.D. (Oklahoma State University)
Assistant Professor, IFAS, Agricultural Research and Educational Center, Belle Glade (1975-1975).

KIKER, CLYDE F., Ph.D. (University of Florida)
Assistant Professor of Food and Resource Economics (1966-1974). •

KILMER, RICHARD L., Ph.D. (Ohio State University)
Assistant Professor, Food & Resource Economics, IFAS (1977-1977).

KILPATRICK, KERRY E., Ph.D. (University of Michigan)
Associate Professor of Industrial & Systems Engineering, Director of Health Systems Research Division (1970-1974).

KIMBALL, SOLON T., Ph.D. (Harvard University)
Graduate Research Professor of Anthropology (1966-1966).

KIMBROUGH, JAMES WILLIAM, Ph.D. (Cornell University)
Professor of Botany, Arts and Sciences (1964-1976).

KIMBROUGH, RALPH BRADLEY, Ed.D. (University of Tennessee)
Professor of Education (1958-1966).

KING, ANN HUFFMAN, M.S. (Florida State University)
Assistant Librarian, IFAS (1966-1969).

KING, ARTHUR D., Ph.D. (Florida State University)
Associate Professor of Dental Education, College of Dentistry (1970-1975).

KING, CHARLES E., M.D. (Bowman Gray)
Assistant Professor of Medicine (1977-1977).

KING, EMILY ELIZABETH, Ph.D. (University of Wisconsin)
Professor (Extension Program Specialist), IFAS, (1946-1964).

KING, FRED E., M.S. (Indiana University)
Director for Housing Personnel, Division of Housing (1951-1977).

KING, FREDERICK A., Ph.D. (Johns Hopkins University)
Professor and Chairperson, Department of Neurosciences (1972-1972).

KING, GREGORY J., D.M.Sc. (Harvard University)
Assistant Professor of Orthodontics, College of Dentistry (1975-1975).

KING, HAROLD L., B.S. Adv. (University of Florida)
Assistant Bookstore Manager (1959-1973).

KING, ROBERT L., Ph.D. (Johns Hopkins University)
Associate Professor of Neuroscience (1974-1977).

KING, ROY W., Ph.D. (Cambridge University)
Associate in Chemistry (1969-1970).

KINLOCH, ROBERT ARMSTRONG, Ph.D. (University of California)
Associate Professor (Associate Nematologist), IFAS, Agricultural Research Center, Jay (1968-1974).

KINZER, JOHN M., M.A.
Assistant to the Vice President for Student Affairs (1971-1971).

KINZER, SUZANNE M., Ed.D. (Rochester University)
Associate Professor of Education (1970-1975).

KINZEY, BERTRAM YORK, JR., M.S.A.E. (University of Kansas)
Professor of Architecture (1959-1965).

KIRKPATRICK, MARTIN SMITH, M.A. (University of Florida)
Professor of English (1956-1975).

KIRMSE, DALE WILLIAM, Ph.D. (Iowa State University)
Assistant Professor of Chemical Engineering (1964-1965). •

KITCHENS, CRAIG S., M.D. (University of Florida)
Assistant Professor of Medicine, VAH (1975-1976).

KITTS, JOHN STEWART, M.M.
Associate Professor of Music (1965-1974).

KLEIN, ELMER FLOYD, JR., M.D. (University of Missouri)
Associate Professor of Anesthesiology and Surgery, Chief Division of Respiratory Care and Medical Director of Surgical Intensive Care Unit (1971-1975).

KLEIN, PAUL A., Ph.D. (University of Florida)
Associate Professor of Pathology (1969-1974).

KLEMENT, FRANK WILLIAM, M.A.
Assistant Professor of Engineering Graphics (1958-1958).

KLINE, WILLIAM E., Ed.D. (University of Denver)
University Counseling Psychologist; Associate Director Student Health Services (1965-1969).

KNAPP, JOSEPH L., Ph.D. (Kansas State University)
Associate Professor, IFAS (1977-1977).

KNAUSS, JAMES FREDERICK, Ph.D. (Cornell University)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research Center, Apopka (1969-1974).

KNELL, JOHN DAVID, Ph.D. (University of Florida)
Assistant Research Scientist (Entomology and Nematology), IFAS (1976-1976).

KNIGHT, JAMES W., Ed.D. (University of Georgia)
Acting Dean, Academic Affairs for Continuing Education (1973-1976).

KNISELEY, SHERMAN PHILIP, Ph.D. (U. North Carolina)
Professor of Humanities (1964-1977).

KNOTTS, DOUG
Assistant Head Coach (1969-1976).

KNOWLES, LOIS NINA, Ph.D. (Laurence University)
Professor, College of Nursing (1956-1973).

KNOWLTON, CHARLES D., M.Engr. (University of Florida)
Captain, U.S. Army, Assistant Professor of Military Science (1977-1977).

KOBURGER, JOHN ALFRED, Ph.D. (North Carolina State Univ.)
Associate Professor (Associate Microbiologist), IFAS (1969-1973).

KOEFOD, PAUL E., Ph.D. (Graduate Institute for International Studies, University of Geneva)
Professor of Economics (1956-1965).

KOEHLER, GARY JOSEPH, Ph.D. (Purdue University)
Associate Professor of Management (1974-1976).

KOEHLER, PHILLIP G., Ph.D. (Cornell University)
Assistant Professor (Extension Entomologist), IFAS (1975-1975).

KOEPKE, GARY E., B.S. (University of Cincinnati)
Planning Consultant (1973-1973).

KOGER, MARVIN, Ph.D. (University of Missouri)
Professor (Animal Geneticist), IFAS (1951-1951).

KOLARIK, J. MILAN, Ph.D. (University of Pittsburgh)
Director of University Counseling Center; Associate Professor of Psychology (1956-1963).

KOLTS, BYRON E., M.D. (University of Rochester)
Associate Professor of Medicine (1972-1977).

KONOPA, JAMES E., B.S. (Florida International University)
Instructor of Community Health and Family Medicine (1977-1977)

KOO, ROBERT CHUNG JEN, Ph.D. (University of Florida)
Professor (Horticulturist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1953-1969).

KORSCHING, PETER FRITZ, Ph.D. (University of Kentucky)
Assistant Professor (Extension 4-H Youth Specialist), IFAS (1977-1977).

KORAN, JOHN JOSEPH, JR., Ph.D. (Stanford University)
Professor of Education (1971-1974).

KORAN, MARY LOU, Ph.D. (Stanford University)
Professor of Education (1973-1976).

KOSCH, SHARON G., Ph.D. (University of Florida)
Clinical Psychologist (1974-1974).

KOSTEWICZ, STEPHEN R., Ph.D. (Ohio State University)
Assistant Professor (Horticulturist), IFAS (1972-1972).

KOTEY, PAUL F. A., Ph.D. (University of Wisconsin)
Associate Professor of Humanities (1974-1976).

KOVALIK, GUSTAVE THOMAS, M.A. (University of Denver)
Associate Librarian, IFAS (1972-1977).

KOZAL, ALBERT PHILLIP, M.A.
Assistant Director of Housing, Student Housing (1971-1977).

KRAMER, MAUREES, M.Sc.D. (Boston University)
Assistant Professor of Periodontics, College of Dentistry (1977-1977).

KRAMER, SOL, Ph.D. (University of Illinois)
Professor of Ethology (1964-1975).

KRATINA, FREDRIC K., M.D. (Medical College of Georgia)
University Physician and Assistant Professor of Community Health and Family Medicine (1976-1976).

KRAUSCHE, CHARLES EMIL, M.S.C.E. (Georgia Technological Univ.)
Assistant Professor of Building Construction (1970-1971).

KREICHER, LAWRENCE LOUIS, Ph.D. (Harvard University)
Assistant Professor of Economics (1976-1976).

KREMGOLD, DAVID ALAN, M.F.A.
Assistant Professor of Art (1972-1977).

KRETSCHMER, ALBERT EMIL, JR., Ph.D. (Rutgers University)
(1952-1966).

KREUTZIGER, SARAH S., M.S.W. (University of Tennessee)
Instructor of Social Work in Psychiatry (1974-1974).

KREZDORN, ALFRED HERMAN, Ph.D. (Texas A&M University)
Professor (Horticulturist) Fruit Crops Department (1957-1960).

KROP, HARRY D., Ph.D. (University of Miami)
Assistant Professor of Clinical Psychology V.A.1 (1971-1971).

KROPP, JAMES R., B.A., B.S.
Assistant in Broadcasting in College of Journalism and Communications (1977-1977).

KRUMM, ROGER VINCENT, M.A.
Librarian in Charge of Engineering & Physical Sciences Library (1951-1970).

KRUSE, JOHN F., D.D.S. (New York University)
Assistant Professor of Removable Prosthodontics, College of Dentistry (1976-1976).

KUCHAREK, THOMAS ALBERT, Ph.D. (University of Minnesota)
Assistant Professor (Assistant Plant Pathologist), IFAS (1970-1975).

KUHNHENN, GARY LEE, Ph.D. (Univ. of Illinois)
Assistant Professor of Geology (1977-1977).

KULDAU, JOHN M., M.D. (Western Reserve University)
Associate Professor of Psychiatry (1975-1975).

KURZWEG, ULRICH HERMANN, Ph.D. (Princeton University)
Professor of Engineering Sciences (1968-1976).

KUSHNER, DAVID Z., Ph.D. (University of Michigan)
Professor of Music (1969-1969).

KYLSTRA, CHESTER DYER, Ph.D. (University of Florida)
Associate Professor of Nuclear Engineering Sciences (1967-1967).

KYNION, DENNIS P.,
Asst. Sports Info. Dir. (1977-1977).

LABARBERA, MICHAEL, Ph.D. (Duke University)
Assistant Professor of Zoology (1976-1976).

LABISKY, RONALD F., Ph.D. (University of Wisconsin)
Professor and Acting Chairperson of Department of Forest Resources and Conservation (Wildlife Ecology), and Acting Director of School of Forest Resources and Conservation IFAS (1976-1977).

LABRECQUE, GERMAIN C., Ph.D. (Ohio State University)
Professor (Entomologist) and Supervisor of Premises Treatment Project, IFAS, USDA, Entomology Research Laboratory (1963-1973).

LA GRECA, ANTHONY J., Ph.D. (Ohio State University)
Director, Urban and Regional Research Center, Associate Professor of Sociology (1973-1977).

LAIPIS, PHILIP J., Ph.D. (Stanford University)
Assistant Professor of Biochemistry and Molecular Biology and Assistant Professor of Veterinary Medicine (1974-1974).

LAITINEN, HERBERT AUGUST, Ph.D. (University of Minnesota)
Graduate Research Professor of Chemistry and Environmental Engineering (1974-1974).

LAMBERT, ROY E., Ph.D. (University of Illinois)
Associate Professor of Humanities (1959-1963).

LAMME, ARY JOHANNES, Ph.D. (Syracuse University)
Assistant Professor of Social Sciences and Geography (1974-1974).

LAMME, LINDA LEONARD, Ph.D. (Syracuse University)
Assistant Professor of Education (1974-1974).

LANCIANI, CARMINE A., Ph.D. (Cornell University)
Associate Professor of Zoology (1968-1973).

LANDSMAN, TED L., Ph.D. (Syracuse University)
Professor of Psychology and Counselor Education (1958-1973).

LANGFORD, ALLIE GERALD, Ed.D. (Columbia University)
*Associate Professor of English, Adviser (1953-1966).**

LANGFORD, R. G., M.M.
Associate Professor of Music (1971-1977).

LANGHAM, MAX RAYMOND, Ph.D. (University of Illinois)
*Professor, Food and Resource Economics Department, IFAS (1962-1970).**

LANZILLOTTI, ROBERT FRANKLIN, Ph.D. (California at Berkeley)
Professor of Economics and Dean of College of Business Administration and School of Accounting (1969-1969).

LARCHE, THELMA B., M.A. (Florida State University)
Assistant Librarian, P. K. Yonge Laboratory School (1963-1968).

LARKIN, LYNN HAYDOCK, Ph.D. (University of Colorado)
Associate Professor of Anatomy (1968-1976).

LARSEN, JANET J., Ed.D. (University of Florida)
Associate Professor of Education (1969-1974).

LARSEN, KENNETH JAMES, M.A. (University of San Diego)
Associate Professor of Naval Science.

LARSON, JEAN A., Ph.D. (Dartmouth)
Assistant Professor of Mathematics (1974-1974).

LASKIN, JEFFREY L., D.D.S. (Indiana University), M.S. (Ohio State University)
Assistant Professor of Oral Surgery, College of Dentistry (1976-1976).

LASLEY, MARION MURRAY, Ph.D. (Columbia University)
Associate Professor of Spanish (1956-1956).

LATIE, MOHAMMED A., Ph.D. (University of Florida)
Assistant Engineer in Coastal and Oceanographic Engineering (1974-1975).

LATOUR, MARINUS HENRY, M.S.E.
Associate Professor of Electrical Engineering (1946-1950).

LATOUR, STEPHEN A., Ph.D. (University of NC at Chapel Hill)
Assistant Professor of Marketing (1976-1976).

LAWLESS, ROBERT D., Ph.D. (New School of Social Research)
Assistant Professor of Social Sciences and Anthropology (1976-1976).

LAWRENCE, FREDERIC S., M.A.T. (Jacksonville University)
Teacher, P. K. Yonge Laboratory School (1970-1972).

LAWRENCE, GORDAN D., Ph.D. (Claremont Graduate School)
Associate Professor of Education (1969-1969).

LAWRENCE, PAULINE, Ph.D. (University of Florida)
Assistant Professor of Zoology (1976-1976).

LEACOCK, ROBERT JAY, Ph.D. (University of Florida)
Associate Professor of Physical Sciences, Advisor (1971-1976).

LEADON, BERNARD MATHEW, Ph.D. (University of Minnesota)
Professor of Engineering Sciences (1964-1964).

LEAHY, THOMAS M., M.A. (University of Florida)
Assistant in Editorial, IFAS (1974-1974).

LEAVENWORTH, RICHARD S., Ph.D. (Stanford University)
Professor of Industrial & Systems Engineering (1966-1977).

LEAVITT, NORMA MURIEL, Ed.D. (Columbia University)
Professor of Professional Physical Education (1953-1963).

LEBO, GEORGE ROBERT, Ph.D. (University of Florida)
Associate Professor of Astronomy (1964-1977).

LEBOWITZ, MARTIN S., D.D.S., M.S. (Indiana University)
Acting Chairman & Assistant Professor of Oral Surgery (1975-1977).

LEE, CHING-SAN, Ph.D. (University of California)
Assistant Professor of Pharmacy (1977-1977).

LEE, HONG H., Ph.D. (Purdue University)
Assistant Professor of Chemical Engineering (1971-1976).

LEE, JONG-YING, Ph.D. (University of Florida)
Research Economist, Food and Resource Economics, DC, IFAS (1975-1976).

LEE, PERMILLAS ARTEN, JR., M.A.
Assistant Professor of Physical Education (1948-1951).

LEFTRIDGE, CLIFTON A., M.D. (Meharry Medical College)
Assistant Professor of Radiology (1976-1976).

LEGG, KEITH R., Ph.D. (University of California)
Professor of Political Science (1966-1975). •

LEGRAND, FERDINAND, M.S. (College for Sugar Chemistry and Technology, Deventer, Holland)
Associate Professor of Agronomy, IFAS (1958-1972).

LEHMANN, LUCILE R., M.S. (Florida State University)
Assistant Engineer (Archivist) in Coastal and Oceanographic Engineering (1974-1974).

LEHNER, RICHARD A., M.S.
Assistant in Broadcasting in Journalism and Communications (1977-1977).

LEIBBRANDT, VERNON DEAN, Ph.D. (Iowa State University)
Assistant Professor (Assistant Animal Scientist), IFAS, Agricultural Research Center, Marianna (1975-1975).

LEIBMAN, KENNETH C., Ph.D. (New York University)
Professor of Pharmacology and Therapeutics (1956-1968).

LEILICH, ROY EDGAR, Re.D. (University of Indiana)
Professor of Recreation (1952-1967).

LEMARCHAND, RENE, Ph.D. (Univ. of California at L.A.)
Professor of Political Science (1962-1971). •

LEMBERGER, MAX AUGUST, M.S.
Associate Professor of Pharmacy, Assistant Dean, College of Pharmacy (1971-1971).

LEO, A. LEWIS, D.M.D. (University of Alabama)
Assistant Dean for Auxiliary Programs & Associate Professor of Community Dentistry, College of Dentistry (1973-1977).

LEONARD, CHESTER D., Ph.D. (Rutgers University)
Professor (Horticulturist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1950-1966).

LEONARD, CHRISTINA M., Ph.D. (Massachusetts Institute of Technology)
Associate Professor of Neuroscience (1976-1976).

LEPPLA, NORMAN CAREY, Ph.D. (University of Arizona)
Assistant Professor (Assistant Entomologist), IFAS, USDA (1973-1973).

LERCH, HAROLD ALEXANDER, Ph.D. (Ohio State University)
Associate Professor of Professional Physical Education (1968-1973).

LESLIE, GERALD R., Ph.D. (Ohio State University)
Professor of Sociology (1967-1967).

LEVIN, SIDNEY, M.D. (Baylor University)
Professor of Pediatrics and Chairperson, Department of Pediatrics (JHEP).

LEVY, C. M. JR., Ph.D. (University of Wisconsin)
Professor of Psychology and Clinical Psychology. (1964-1975).

LEWIS, A. L., JR., Ph.D. (Duke University)
Professor of Humanities and Philosophy (1957-1966).

LEWIS, ARTHUR J., Ed.D. (Columbia University)
Professor of Education and Director, Division of Curriculum and Instruction, College of Education (1970-1970).

LEWIS, BARTLETT B., M.Stat. (University of Florida)
Assistant in Research, Bureau of Economic and Business Research (1974-1977).

LEWIS, DAVID E., Ed.D. (Duke University)
Assistant Professor of Community Health and Family Medicine (1972-1972).

LEWIS, HAL GRAHAM, Ph.D. (Columbia University)
Distinguished Service Professor of Educational Foundations (1936-1976).

LEWIS, JEFFREY, J.D. (Duke University)
Professor of Law (1972-1977).

LEWIS, W. J., Ph.D. (Mississippi State University)
Assistant Professor of Entomology, Georgia Coastal Plains Experiment Station, Tifton, Georgia, IFAS (1970-1970).

LEZOTTE, DENNIS C., Ph.D. (State University of New York at Buffalo)
Assistant Research Scientist (1975-1975). Instructor of Pathology and Assistant Professor of

LI, KUANG-PANG, Ph.D. (University of Illinois)
Assistant Professor of Chemistry (1973-1973).

LI, SHENG-SAN, Ph.D. (Rice University)
Associate Professor of Electrical Engineering (1968-1969).

LIEB, SANDI, Ph.D. (University of Kentucky)
Assistant Professor (Assistant Animal Nutritionist), IFAS (1974-1974).

LIEBERMAN, LESLIE SUE, Ph.D. (University of Connecticut)
Assistant Professor of Anthropology (1976-1977).

LILES, ANNETTE LUCILLE, M.A., B.A. in L.S.
Librarian and Chairman, Reference and Bibliography Department (1947-1970).

LINCOLN, EDWARD PALMER, Ph.D. (University of Arizona)
Research Scientist, IFAS (1975-1975).

LIND, STEPHEN ANDERSON, LL.M. (New York University)
Professor of Law (1970-1974). •

LINDGREN, ERIK RUNE, Tekn.Dr. (Royal Inst. of Tech., Sweden)
Professor of Engineering Sciences (1965-1965). •

LINDHOLM, FRED ARTHUR, Ph.D. (University of Arizona)
Professor of Electrical Engineering (1966-1966).

LINDQUIST, ROBERT CARL, M.S.
Assistant Professor of Physical Sciences (1959-1965).

LINGREN, PETER D., Ph.D.
Associate Professor (Associate Entomologist), College Station, Texas, Toxicology and Entomology, IFAS (1971-1971).

LIPSEY, RICHARD L., Ph.D. (University of Illinois)
Associate Professor IFAS (1976-1976).

LISCA, PETER, Ph.D. (University of Wisconsin)
Professor of English (1960-1970). •

LISLE, FORREST, JR., M.Arch. (Cornell University)
Associate Professor of Architecture (1970-1975).

LITTELL, RAMON C., Ph.D. (Oklahoma State)
Associate Professor (Associate Statistician), IFAS (1970-1975).

LITTLE, JOSEPH WALLACE, J.D. (University of Michigan)
Professor of Law (1967-1971).

LITZ, RICHARD EARLE, Ph.D. (University of Nottingham)
Assistant Professor (Assistant Research Scientist), IFAS Agricultural Research and Education Center, Homestead (1977-1977).

LLINAS, JOSE J., M.D. (Havana University)
Professor of Psychiatry (1974-1976).

LLORENS, LELA A., Ph.D. (Walden University)
Professor and Chairman of Occupational Therapy (1971-1977).

LLOYD, JAMES E., Ph.D. (Cornell University)
Professor of Entomology, IFAS, (1966-1974).

LOCASCIO, SALVADORE JOSEPH, Ph.D. (Purdue University)
Professor (Horticulturist), IFAS (1959-1969).

LOCKE, DAVID M., Ph.D. (University of Illinois)
Assistant Professor of English (1977-1977).

LOCKHART, MADELYN, Ph.D. (Ohio State University)
Professor of Economics, Professor, Bureau of Economic and Business Research (1960-1974).

LOEB, IRVING
Systems Coordinator (1969-1975).

LOEHMAN, EDNA TUSAK, Ph.D. (Purdue University)
Associate Professor, Food and Resource Economics Department, IFAS (1970-1975).

LOEHMAN, RONALD ERNEST, Ph.D. (Purdue University)
Associate Professor of Materials Science and Engineering (1970-1975).

LOESCH, LARRY CHARLES, Ph.D. (Kent State University)
Assistant Professor of Education (1973-1973).

LOFGREN, CLIFFORD SWANSON, Ph.D. (University of Florida)
Professor (Entomologist), USDA, IFAS (1968-1975).

LOGGINS, PHILLIP EDWARDS, M.S. (Oklahoma State)
Professor (Animal Husbandman), IFAS, (1953-1974).

LOKKEN, LAWRENCE ALBERT, J.D (University of Minnesota)
Professor of Law (1974-1977). •

LONG, GARY, Ph.D. (Texas A & M University)
Associate Professor of Civil Engineering (1977-1977).

LONG, ROBERT L., Ph.D. (University of Illinois)
Assistant Professor of Mathematics (1972-1972).

LONGLEY, SELDEN, III, M.D. (Vanderbilt University)
Assistant Professor of Medicine, VAH (1975-1975).

LONGSTRETH, CATHERINE ARCHIBALD, Ed.D. (University of Miami)
Assistant in Faculty Relations and Special Assistant to the President for Faculty Relations (1974-1978).

LONGSTRETH, JAMES W., Ph.D. (University of Florida)
Associate Professor of Education (1977-1977).

LOOSLI, JOHN K., Ph.D. (Cornell University)
Visiting Professor in Animal Science, IFAS (1974-1974).

LOSANO, WAYNE A., Ph.D. (Rensselaer Polytechnic Institute)
Assistant Professor of English (1975-1975).

LOTZ, JOHN C., M.A.
Head Basketball Coach (1973-1973).

LOTZKAR, STANLEY, D.D.S. (New York University) M.P.H. (University of Pittsburgh)
Professor and Chairman of Community Dentistry, College of Dentistry (1971-1977).

LOUGHLIN, GERALD M., M.D. (University of Rochester)
Assistant Professor of Pediatrics (1977-1977).

LOUIE, KENNETH A., D.M.D. (University of Florida)
Assistant Professor of Community Dentistry, College of Dentistry (1976-1976).

LOW, SAMUEL B., D.D.S., M.S. (University of Texas)
Assistant Professor of Periodontics, College of Dentistry (1975-1975).

LOWDIN, PER-OLOV, Ph.D. (Uppsala)
Graduate Research Professor of Chemistry and Physics (1960-1960).

LOWE, RONALD EDSEL, Ph.D. (Purdue University)
Associate Professor (Associate Entomologist), IFAS, USDA (1966-1973).

LOWE, TIMOTHY J., PH.D. (Northwestern University)
Associate Professor of Industrial and Systems Engineering (1973-1977).

LOWENSTEIN, RALPH L., Ph.D. (University of Missouri)
Dean and Professor of Journalism and Communications (1976-1976).

LOZIER, TIMOTHY ROBERT, M.L.S. (University of California)
Assistant Librarian, Catalog Department (1976-1976).

LU, SUNG YUN, Ph.D. (Carnegie Institute of Technology)
*Associate Professor of Engineering Sciences (1959-1963).**

LUCA, MATTHEW H., B.S.C.E. (Tulane University)
Lieutenant, U. S. Navy, Assistant Professor of Naval Science (1972-1972).

LUCANSKY, TERRY W., Ph.D. (Duke University)
Associate Professor of Botany, Arts and Sciences (1971-1976).

LUEHR, CHARLES POLING, Ph.D. (University of California)
Associate Professor of Mathematics (1968-1975).

LUGO, ARIEL EMILIO, Ph.D. (University of North Carolina)
Associate Professor of Botany, Arts and Sciences (1969-1976).

LUKE, HERBERT HODGES, Ph.D. (Louisiana State University)
Professor (Plant Pathologist, USDA) IFAS, (1955-1955).

LUNDEEN, HARRY C., D.D.S. (University of Minnesota)
Chairman and Professor of Occlusion & Fixed Prosthodontics, College of Dentistry (1971-1977).

LUNDGREN, DALE ALLEN, Ph.D. (University of Minnesota)
Professor of Environmental Engineering Sciences (1972-1976).

LUTRICK, MONROE CORNEALOUS, Ph.D. (Ohio State University)
Professor (Soil Chemist), IFAS, Agricultural Research and Education Center, Jay (1956-1977).

LUTTGE, WILLIAM G., Ph.D. (University of California)
Associate Professor of Neuroscience and Associate Chairperson (1971-1976).

LYBAS, JOHN MICHAEL, Ph.D. (University of Illinois)
Assistant Professor of Civil Engineering (1977-1977).

LYNCH, ANN, Ed.D. (University of Florida)
University Counseling Psychologist (1968-1968).

LYNCH, MICHEL A., Ph.D. (University of Florida)
Associate Professor of Physical Sciences and Astronomy (1971-1977).

LYNNE, GARY DEAN, Ph.D. (Oregon State University)
Assistant Professor (Assistant Agricultural Economist), Food and Resource Economics, IFAS (1974-1974).

LYONS, HENRY R., M.D. (Georgetown University)
Associate Professor of Psychiatry, and Chief, Psychiatric Service, VAH (1967-1967).

LYRENE, PAUL MANGUS, Ph.D. (Purdue University)
Assistant Professor (Assistant Plant Breeder), IFAS (1977-1977).

MACAULAY, NEILL WEBSTER, JR., Ph.D. (University of Texas)
Professor of History (1964-1975).

MACDONALD, WILLIAM DICKSON, S.J.D. (University of Michigan)
Professor of Law (1948-1951).

MAC FADDEN, BRUCE J., Ph.D. (Columbia)
Visiting Assistant Curator, Vertebrate Paleontology, Florida State Museum and Affiliate Assistant Professor of Zoology (1977-1977).

MACQUIGG, DAVID RODGERS, Ph.D. (California Inst. of Tech.)
Assistant Professor of Electrical Engineering (1977-1977).

MACKENZIE, RICHARD S., D.D.S. (University of Michigan) Ph.D. (University of Pittsburgh)
Professor and Chairman of Dental Education, College of Dentistry (1969-1974).

MADDALA, G. S., Ph.D. (University of Chicago)
Graduate Research Professor of Economics (1975-1975).

MADURO, LOIS A., M.R.C. (University of Florida)
Assistant Professor of Occupational Therapy (1973-1977).

MAGEE, CLARENCE H., B.A.
Coordinator of Educational Media, Learning Resources Center, J. Hillis Miller Health Center (1964-1974).

MAGGIOTTO, MICHAEL A., Ph.D. (Indiana University)
Assistant Professor, Political Science (1976-1977).

MAHAN, CHARLES S., M.D. (Northwestern University)
Associate Professor of Obstetrics and Gynecology and Head of Ambulatory Care Division (1974-1975).

MAHAN, PARKER E., D.D.S. (Emory University)
Professor and Chairman of Basic Dental Sciences, College of Dentistry (1971-1971).

MAHIG, JOSEPH, Ph.D. (Ohio State)
Professor of Mechanical Engineering (1967-1973).

MAHON, JOHN KEITH, Ph.D. (University of California at Los Angeles)
Professor of History and Holder of the Chair of American Studies (1954-1966).

MAHONEY, JAMES J., M.D. (University of Florida)
Assistant Professor of Medicine (1976-1977).

MAHONEY, JOHN FRIEND, Ph.D. (Lehigh University)
Associate Professor of Industrial and Systems Engineering (1964-1966).

MAJTHAY, ANTAL, Ph.D. (University of Szeged, Hungary)
Associate Professor of Management (1972-1972).

MALAGODI, EDWARD F., JR., Ph.D. (University of Miami)
Associate Professor of Psychology (1968-1972).

MALICKSON, DAVID L., M.S.
Associate Professor of Journalism and Communications (1969-1977).

MALO, SIMON EDWARD, Ph.D. (University of Florida)
*Professor (Horticulturist), IFAS Agricultural Research and Education Center, Homestead (1964-1977).**

MALONEY, FRANK EDWARD, J.D. (University of Florida)
Professor of Law and Dean Emeritus (1946-1973).

MALVERN, LAWRENCE EARL, Ph.D. (Brown University)
Professor of Engineering Sciences (1969-1969).

MALVERN, MARJORIE, Ph.D. (Michigan State University)
Associate Professor of Humanities (1969-1975).

MANASTER, STEVEN, Ph.D. (University of Chicago)
Assistant Professor of Finance (1975-1975).

MANGOS, JOHN A., M.D. (Aristotelion University)
Professor of Pediatrics, and Chief, Pulmonology and Cystic Fibrosis (1975-1975).

MANISCALCO, JACK E., M.D. (University of Florida)
Assistant Professor of Surgery, VAH (1975-1975).

MANN, ROBERT T., LL.M. (Yale)
*Professor of Law (1974-1974).**

MANS, RUSTY J., Ph.D. (University of Florida)
Professor of Biochemistry and Molecular Biology (1969-1969).

MANSELL, ROBERT S., Ph.D. (University of Iowa)
Associate Professor of Soil Science (Soil Physics), IFAS (1968-1973).

MAPLE, MARILYN J., M.A.
Coordinator of Educational Media, Learning Resources Center, J. Hillis Miller Health Center (1967-1974).

MAPLES, WILLIAM R., Ph.D. (University of Texas)
Associate Curator of Anthropology and Chairman of Social Sciences, Florida State Museum and Joint Associate Professor of Anthropology (1968-1973).

MARAULIA, MATTHEW DANIEL, B.S. (Florida Southern)
Adjunct Instructor (Assistant in Chemistry), IFAS, DC, AREC-Lake Alfred (1957-1960).

MARCH, ALLAN W., M.D. (Johns Hopkins University)
Assistant Professor of Community Health and Family Medicine (1977-1977).

MARCUS, ROBERT BROWN, Ed.D. (University of Florida)
Professor of Physical Sciences and Geography, Adviser (1955-1968).

MAREN, THOMAS H., M.D. (Johns Hopkins University)
Professor and Chairperson, Department of Pharmacology and Therapeutics (1955-1955).

MARGOLIS, MAXINE LUANNA, Ph.D. (Columbia University)
Associate Professor of Anthropology (1969-1974).

MARION, WAYNE RICHARD, Ph.D. (Texas A & M University)
Assistant Professor (Assistant Wildlife Ecologist), IFAS (1975-1975).

MARKEL, NORMAN N., Ph.D. (University of Chicago)
Professor of Speech, Psychology, and Anthropology (1964-1973).

MARKS, RONALD G., Ph.D. (University of Florida)
Assistant Professor of Statistics (1974-1974).

MARLATT, ROBERT BRUCE, Ph.D. (University of Arizona)
Professor (Plant Pathologist), IFAS, Agricultural Research and Education Center, Homestead (1964-1973).

MARLOWE, G. A., JR., Ph.D. (University of Maryland)
Professor (Extension Vegetable Specialist), IFAS, AREC, Bradenton (1969-1969).

MAROUSKY, FRANCIS J., Ph.D. (University of Virginia)
Associate Professor (Associate Horticulturist), IFAS, USDA, Agricultural Research and Education Center, Bradenton (1967-1973).

MARS, DONALD R., M.D. (University of Miami)
Assistant Professor of Medicine (1977-1977).

MARSHALL, SIDNEY PAUL, Ph.D. (University of Minnesota)
Professor (Nutritionist), IFAS (1942-1958).

MARSTON, ROBERT Q., M.D. (Medical College of Virginia)
President of University of Florida and Professor of Medicine (1974-1974).

MARTIN, DONALD F., M.A.
Assistant Professor of Journalism and Communications (1974-1974).

MARTIN, FRANK G., Ph.D. (N. Carolina State College)
Associate Professor (Associate Statistician), IFAS (1964-1964).

MARTIN, THOMAS E., M.S.B.D. (University of Florida)
Associate Professor of Building Construction (1964-1977).

MARTINEZ, JORGE, Ph.D. (Tulane University)
Associate Professor of Mathematics (1969-1975).

MARVEL, MASON, Ph.D. (West Virginia University)
Professor (Extension Vegetable Specialist), IFAS (1957-1970).

MARX, D. H., Ph.D. (North Carolina State University)
Associate Professor of Soil Science (Coop. U.S. Forest Service), IFAS (1972-1972).

MASKIN, MEYER H., M.D. (Wayne University)
Professor of Psychiatry, VAH (1968-1968).

MASSEY, THOMAS, M.Ed. (University of Florida)
Instructor, P. K. Yonge Laboratory School (1976-1971).

MATHENY, ELLIS L., JR., (University of Tennessee)
Assistant Professor of Entomology, IFAS (1976-1976).

MATHIAS, JOHN R., M.D. (Temple University)
Assistant Professor of Medicine, VAH (1975-1975).

MATHIS, WILLIAM KARY, JR., Ph.D. (Texas A & M University)
Associate Professor and Director of Agricultural Marketing Research Center, Food and Resource Economics Department, IFAS (1969-1974).

MATTHEWS, CHARLES ARNOLD, Ph.D. (University of Vriginia)
Professor of Finance; Associate Dean, College of Business Administration (1948-1976).

MATTHEWS, RICHARD FINIS, Ph.D. (Cornell University)
Professor (Food Technologist), IFAS (1965-1972).

MATURO, FRANK J. S., JR., Ph.D. (Duke University)
Professor of Zoology; Director of University of Florida Marine Laboratory (1958-1970).

MAUDERLI, WALTER, D.Sc. (University of Zurich)
Professor of Radiation Physics (1960-1965).

MAUDERLI, ANDRE, D.D.S. (University of Berne Dental School)
Assistant Professor of Occlusion and Fixed Prosthodontics, College of Dentistry (1976-1977).

MAULDIN, RICHARD DANIEL, Ph.D. (University of Texas)
Associate Professor of Mathematics (1969-1975).

MAUN, ALICIA R., M.D. (Far Eastern University)
University Physician (1977-1977).

MAUTZ, ROBERT BARBEAU, J.D. (Yale University)
Regent's Professor of Law and Higher Education (1950-1975).

MAXWELL, FOWDEN G., Ph.D. (Kansas State University)
Professor and Chairperson, Entomology and Nematology, IFAS (1976-1976).

MAY, FRANK PIERCE, Ph.D. (University of Florida)
Professor of Chemical Engineering (1955-1969).

MAYBERRY, MAURICE E., B.S.B.A.
Director, Career Planning and Placement Center (1953-1953).

MAYER, MARION SIDNEY, Ph.D. (Texas A & M University)
Associate Professor (Associate Entomologist), IFAS, USDA (1966-1973).

MAYHEW, IAN G., Ph.D. (Cornell University)
Associate Professor, College of Veterinary Medicine (1977-1977).

MAZIS, MICHAEL, Ph.D. (Pennsylvania State University)
*Associate Professor of Marketing (1971-1974).**

MCALISTER, LYLE NELSON, Ph.D. (University of California)
Professor of History (1950-1963).

MACCACHREN, JAMES ROLAND, M.A.
Assistant Professor of Physical Education (1946-1946).

MCCALL, GAIL ELAINE, Re.D. (Indiana University)
Assistant Professor of Recreation (1973-1973).

MCCALL, PETER T., M.Ed. (University of Florida)
Instructor, P. K. Yonge (1970-1976).

MCCAREY, BERNARD E., Ph.D. (Marquette University)
Assistant Professor of Ophthalmology (1973-1973).

MCCARTHY, KEVIN MICHAEL, Ph.D. (Univ. of North Carolina)
Associate Professor of English (1969-1974).

MCCAULLEY, MARY HAWLEY, Ph.D. (Temple University)
Assistant Professor of Clinical Psychology and Psychology (1964-1964).

MCCLAVE, JAMES THOMAS, Ph.D. (University of Florida)
Associate Professor of Statistics (1971-1977).

MCCLOSKEY, JANE, M.L.S. (St. U. of New York at Albany)
Assistant Law Librarian (1977-1977).

MCCLOUD, DARELL EDISON, Ph.D. (Purdue University)
*Professor, Agronomy Department, IFAS (1948-1965).**

MCCOLLOUGH, W. ANDREW, Ph.D. (University of Florida)
Associate Professor of Finance (1969-1976).

MCCONNELL, DENNIS BROOKS, Ph.D. (University of Wisconsin)
Associate Professor (Associate Ornamental Horticulturist), IFAS (1970-1975).

MCCORMACK, GUY L., M.S. (Ohio State University)
Assistant Professor of Occupational Therapy (1975-1977).

MCCORMICK, WILLIAM C., Ph.D. (University of Wisconsin)
Associate Professor of Pharmacy (1973-1976).

MCCORNACK, ANDREW ADAM, M.S. (University of
Adjunct Associate Professor (Associate Horticulturist), IFAS, DC, AREC-Lake Alfred (1952-1969). Agricultural Research and Educational Center, Lake Alfred (1953-1970).

MCCOWN, JACK THOMAS, Ed.D. (North Carolina State University)
Professor and Associate Dean for Extension, IFAS (1951-1970).

MCCOY, CLAY W., Ph.D. (University of California)
Associate Professor of Entomology, Agricultural Research and Education Center, Lake Alfred, IFAS (1972-1972).

MCCOY, FRANCIS TYRONE, J.D. (University of Florida)
Professor of Law (1955-1970).

MCCOY, RANDOLPH EDWARD, Ph.D. (Cornell University)
Associate Professor (Associate Plant Pathologist), IFAS Agricultural Research and Education Center, Ft. Lauderdale (1971-1977).

MCCOY, TERRY L., Ph.D. (University of Wisconsin)
Assistant Director of the Center for Latin American Studies and Adjunct Assistant Professor of Sociology and Political Science (1975-1975).

MCCREA, BRIAN R., Ph.D. (University of Virginia)
Assistant Professor of English (1976-1976).

MCCUNE, SHANNON, Ph.D. (Clark University)
Professor of Geography (1969-1969).

MCDAVIS, RODERICK J., Ph.D. (University of Toledo)
Assistant Professor of Education (1974-1974).

MCDONALD, CHARLES L., Ph.D. (Michigan State University)
Associate Professor of Accounting, and Assistant Director of School of Accounting (1974-1977).

MCDONALD, NANCY F., M.S.W. (University of North Carolina)
Associate Professor of Social Work in Psychiatry (1960-1969).

MCDOWELL, LEE R., Ph.D. (Washington State University)
Associate Professor, (Associate Animal Nutritionist), IFAS (1971-1977).

MCFADYEN, DONALD CARL, M.Ed. (University of Florida)
Instructor, P. K. Yonge Laboratory School (1966-1970).

MCFARLANE, JAMES, B.Des. (University of Florida)
Program Director and Associate Professor of Interior Design (1958-1973).

MCGHEE, MAX B., Ph.D. (Ohio State University)
Assistant Professor of Agriculture and Extension Education, IFAS (1975-1975).

MCGUIGAN, JAMES E., M.D. (St. Louis School of Medicine)
Professor and Chairperson, Department of Medicine and Chief of Gastroenterology (1969-1976).

MCGUINESS, DAVID M., Ph.D. (University of Minnesota)
Assistant Professor of History (1976-1976).

MCGUIRE, PETER M., Ph.D. (University of North Carolina)
Assistant Professor of Biochemistry and Molecular Biology and Assistant Professor of Veterinary Medicine (1975-1976).

MCGUIRE, VINCENT, Ed.D. (University of Florida)
*Professor of Education (1947-1960).**

MCHARD, JAMES ALVAH, Ph.D. (University of Florida)
Adjunct Assistant Professor (Assistant Chemist), IFAS, DC, AREC-Lake Alfred (1974-1974).

MCKANN, MICHAEL RAYSOR, AMLS
Librarian and Chairperson of Acquisitions Department (1970-1970).

MCKEE, VERNON C., Ph.D. (Iowa State University)
Associate Professor (Director of Planning and Business Affairs), IFAS (1969-1969).

MCKENZIE, MICHAEL W., M.S.P. (University of Florida)
Assistant Professor of Pharmacy (1971-1972).

MCKERNS, KENNETH WILSHIRE, Ph.D. (McGill University)
Professor of Obstetrics and Gynecology (1960-1965).

MCKNEW, APRIL M., M.Ed. (University of Florida)
Instructor, P. K. Yonge Laboratory School (1977-1977).

MCKNIGHT, STEPHEN ALEN, Ph.D. (Emory University)
Associate Professor and Chairman of Humanities (1972-1977).

MCLAUGHLIN, JOHN ROSS, Ph.D. (University of California, Riverside)
Assistant Professor (Assistant Entomologist), USDA, IFAS (1973-1973).

MCLEAN, JAMES P., M.B.A. (University of Florida)
Assistant Professor of Community Health and Family Medicine and Associate Dean for Administration (1972-1975).

MCMILLAN, ROBERT THOMAS, JR., Ph.D. (Washington State Univ.)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research and Education Center, Homestead (1967-1973).

MCMILLIN, MARVIN R., Ed.D. (University of Florida)
Associate Professor of Education and Assistant Dean, College of Education (1969-1975).

MCNAB, BRIAN KEITH, Ph.D. (University of Wisconsin)
*Professor of Zoology (1961-1971).**

MCNAIRY, ALICE HALL, M.Ln.
Librarian and Assistant Chairman of Acquisitions Department (1953-1973).

MCPHERSON, WOODROW WILSON, Ph.D. (Harvard University)
Graduate Research Professor, Food and Resource Economics Department, IFAS, (1962-1962).

MCQUOWN, O. RUTH, Ph.D. (University of Florida)
Professor of Political Science and Associate Dean, of Arts and Sciences (1961-1974).

MCRAE, JOHN MALCOM, M.Arch. (Rice University)
Associate Professor of Architecture and Assistant Dean of the College of Architecture (19671975).

MEAD, FRANK WALDRETH, M.S. (Ohio State University)
Associate Professor (Associate Entomologist), IFAS, DPI (1966-1973).

MEALIEA, WALLACE L., M.S., Ph.D. (University of Missouri)
Associate Professor of Basic Dental Sciences, College of Dentistry (1975-1975).

MEDINA, JOSE E., D.D.S. (University of Maryland)
Professor of Operative Dentistry and Assistant Vice President for Facilities Planning and Operations, J. Hillis Miller Health Center (1967-1976).

MEEK, PHYLLIS M., Ed.D. (University of Florida)
Associate Dean for Student Services and Assistant Professor of Education (1966-1973).

MEHTA, ASHISH J., Ph.D. (University of Florida)
Assistant Professor of Coastal & Oceanographic Engineering, Assistant Professor, Engineering Sciences (1974-1974).

MEHTA, JAWAHAR, M.D. (Medical College, Armitsar, India)
Assistant Professor of Medicine (1976-1976).

MELAMED, BARBARA, Ph.D. (Case Western Reserve)
Associate Professor of Clinical Psychology (1977-1977).

MELTON, BRYAN E., Ph.D. (Iowa State University)
Assistant Professor, Food & Resource Economics, IFAS (1977-1977).

MELVILLE, JOEL GEORGE, Ph.D. (Pennsylvania State University)
Assistant Professor of Civil Engineering (1976-1976).

MENDELOW, ABRAHAM L., M.D. B.Ch. (University of Witwatersrand)
Assistant Professor of Orthopaedic Surgery (1976-1976).

MENDENHALL, SUE ELLEN, M.S. (Indiana State University)
Teacher, P. K. Yonge Laboratory School (1972-1972).

MENDENHALL, WILLIAM, Ph.D. (North Carolina State College)
Professor of Statistics (1963-1963).

MENKS, FEROL, M.S. (Ohio State University)
Assistant Professor of Occupational Therapy (1973-1977).

MERCER, CECIL DUKE, Ed.D. (University of Virginia)
Associate Professor of Education (1974-1977).

MERIMEE, THOMAS J., M.D. (University of Louisville)
Professor and Chief of Endocrinology, (1974-1974).

MERKEL, EDWARD PAUL, B.S.
Assistant Professor (Assistant Entomologist) U.S. Forest Service (1966-1966).

MERRITT, HARRY C., JR., M.S. (Harvard)
Professor of Architecture (1960-1973).

MESA, ROSA QUINTERO, M.S.L.S.
Librarian, Latin American Collection (1961-1977).

MESCH, BARRY, Ph.D. (Brandeis University)
Associate Professor of Religion (1969-1975).

MESSINA, WILLIAM JAMES, M.S. (University of Georgia)
Director of Program Development IFAS (1973-1976).

METCALF, JOSEPH F., Ph.D. (Florida State University)
Assistant Professor of Ophthalmology (1974-1974).

METTS, PAUL E., B.A., C.P.A. (University of South Florida)
Director of Administrative Services, Shands Teaching Hospital & Clinics (1977-1977).

MEURLOTT, K. B., M.J. (University of Florida)
Assistant Professor and Director, Division of Information and Public Services (1966-1973).

MEYER, DENNIS J., D.V.M. (University of Minnesota)
Assistant Professor, College of Veterinary Medicine (1976-1976).

MEYER, MERLE E., Ph.D. (University of Washington)
Professor and Chairperson of Psychology and Professor of Clinical Psychology (1972-1972).

MEYERHOLZ, GEORGE WILLIAM, D.V.M. (Iowa State University)
Professor (Extension Veterinarian), College of Veterinary Medicine-IFAS (1968-1974).

MEYERS, HARRY GEORGE, Ph.D. (University of Georgia)
Associate Professor (Associate Extension Turf Specialist), IFAS (1966-1976).

MIALE, THOMAS D., M.D. (University of Pittsburgh)
Assistant Professor of Pediatrics and Chief of Hematology and Oncology (1973-1975).

MICHA, DAVID ALLAN, Ph.D. (Uppsala University)
Professor of Chemistry and Physics (1969-1974).

MICHAEL, MAX, M.D. (Harvard University)
Professor of Medicine and Assistant Dean for Jacksonville Health Education Programs (1959-1977).

MICKLE, STEPHAN P., J.D. (University of Florida)
Assistant Professor of Law (1971-1971).

MIDCAP, JAMES THOMAS, Ph.D. (Kansas State University)
Assistant Professor (Extension Ornamental Horticulturalist), IFAS (1975-1975).

MILAM, JAMES R., M.S. (University of Florida)
Assistant in Microbiology and Cell Science, IFAS (1975-1975).

MILANICH, JERALD T., Ph.D. (University of Florida)
Associate Curator of Archaeology, Florida State Museum and Joint Associate Professor of Anthropology (1972-1977).

MILD, FRANCES JANE, Ed.S.
Counselor Coordinator, DSSSP.

MILES, RICHARD DAVIS, Ph.D. (Purdue University)
Assistant Professor (Assistant Poultry Nutrionist), IFAS, (1976-1976).

MILLER, ALAN B., M.D. (University of Pittsburgh)
Assistant Professor of Medicine, JHEP (1973-1973).

MILLER, B. LYNN, M.D. (University of Chicago)
Assistant Professor of Pediatrics (1967-1970).

MILLER, CLEVE DOUGLAS, LL.M. (New York University)
*Associate Professor of Law (1973-1974).**

MILLER, D. GARY, Ph.D. (Harvard University)
Associate Professor of Classics and Linguistics (1972-1976).

MILLER, DAMON, M.S. (Iowa State University)
Assistant Professor (Assistant State 4-H Youth Development Specialist) FAMU, IFAS (1970-1972).

MILLER, HOWARD N., Ph.D. (University of California)
Professor (Plant Pathologist) Institute of Food and Agricultural Sciences (1948-1955).

MILLER, J. D., Ph.D. (Purdue University)
Assistant Professor (Assistant Plant Geneticist), USDA, IFAS, Agricultural Research & Education Center, Belle Glade (1971-1971).

MILLER, JAMES W., JR., M.S.F. (University of Florida)
Professor (Logging and Sawmilling), IFAS (1936-1951).

MILLER, JOHN WILLIAM, Ph.D. (University of Florida)
Associate Professor (Plant Pathologist), DPI, IFAS (1968-1970).

MILLER, ROBERT H., M.D. (University of Florida)
Associate Professor of Pediatrics, JHEP (1968-1973).

MILLER, SCOTT A., Ph.D. (University of Minnesota)
Associate Professor of Psychology (1977-1977).

MILLER, WILLIAM M., Ph.D. (Pennsylvania State University)
Assistant Professor (Assistant Agricultural Engineer), IFAS AREC-Lake Alfred (1975-1975).

MILLIMAN, JEROME W., Ph.D. (U. of Calif. at Los Angeles)
Professor of Economics and Urban and Regional Planning (1976-1976).

MILLION, RODNEY R., M.D. (Indiana Medical School)
Professor of Radiation Therapy (1964-1969).

MILLS, JAMES E., M.S.E.E. (Georgia Institute of Technology)
Director Data Processing (1974-1977).

MILLS, JON L., J.D. (University of Florida)
Associate in Law Research (1972-1972).

MILLSAPS, KNOX, Ph.D. (California Institute of Technology)
Professor of Engineering Sciences and Chairperson of the Department (1973-1973).

MILNER, GILBERT C., III, M.D. (University of Texas Southwestern)
Assistant Professor of Psychiatry (1973-1973).

MILTON, JAMES EDMUND, Ph.D. (University of Florida)
Engineer in Engineering Sciences; Resident Director, Eglin AFB (1966-1977).

MILTON, RUTH LOUISE, M.S.
*Associate Professor (Associate State 4-H Club Agent), IFAS, (1952-1966).**

MINCEY, WILBUR FRANKLIN
Assistant Professor (Assistant Meteorologist), IFAS, NWS, Agricultural Research Center, Lakeland (1959-1959).

MINGO, GWENUEL W., M.Ed.
Director, DSSSP and Instructor (1974-1975).

MINNICK, DANNY RICHARD, Ph.D. (University of Florida)
Associate Professor (Associate Entomologist), IFAS (1971-1976).

MIRANDA, SALVADOR, M.S.L.S. (Florida State University)
Assistant Librarian, Acquisitions (1976-1976).

MISBIN, ROBERT I., M.D. (John Hopkins University)
Assistant Professor of Medicine (1976-1976).

MISHOE, JOHN WAYNE, Ph.D. (North Carolina State University)
Assistant Professor (Assistant Agricultural Engineer), IFAS, Agricultural Research and Educational Center, Belle Glade (1974-1974).

MISLEVY, PAUL, Ph.D. (Pennsylvania State University)
Associate Professor (Associate Agronomist), IFAS, Agricultural Research Center, ONA (1971-1977).

MITCHELL, DAVID JAMES, Ph.D. (University of California)
Associate Professor (Associate Plant Pathologist), IFAS (1971-1976).

MITCHELL, EVERETT R., Ph.D. (North Carolina State Univ.)
Professor of Entomology USDA, IFAS (1971-1971).

MITCHELL, VERVIL LOUENE, M.S.
Associate Professor (Extension Home Mgt. and Family Economics Specialist), IFAS (1965-1973).

MITRANI, JOSE DAVID, Engr. (University of Florida)
Assistant Professor of Civil Engineering (1976-1976).

MODELL, JEROME H., M.D. (University of Minnesota)
Professor and Chairperson, Department of Anesthesiology (1969-1969).

MOFFAT, ROBERT C. L., LL.M. (University of Sydney)
Professor of Law (1966-1971).

MOHAMMED, HAMDI A., Ph.D. (U. of Michigan)
Professor and Chairman of Dental Biomaterials, College of Dentistry (1974-1974).

MON BONNIE E., M.N. (University of Florida)
Instructor, College of Nursing (1976-1976).

MONGAN, PATRICK F., M.D. (University of Miami)
Instructor of Community Health and Family Medicine (1977-1977).

MONIF, GILLES, R. G., M.D. (Boston University)
Associate Professor of Obstretics and Gynecology (1968-1971).

MONROE, JAMES HOWARD, Ph.D. (Florida State University)
Assistant Professor of French and Foreign Language Education (1973-1973).

MONTELARO, JAMES, Ph.D. (University of Florida)
Professor (Extension Vegetable Specialist), IFAS (1952-1965).

MONTGOMERY, HOYLE FLEMING, JR., M.A. in L.S.
Associate Librarian, Reference and Bibliography (1962-1970).

MONTI, LAURA VIRGINIA, Ph.D. (Catholic Univ., Buenos Aires)
Librarian, Department of Rare Books and Manuscripts (1957-1973).

MOON, SHARON, M.N. (University of Florida)
Instructor, College of Nursing (1977-1977).

MOORE, ALAN CONINGSBY, M.Ed., M.A.
Professor of Physical Education (1953-1977).

MOORE, CLARENCE A., Ph.D. (University of Alabama)
Professor and Chairperson, Department of General Physical Education (1971-1971).

MOORE, EDWIN L., Ph.D. (Massachusetts State College)
Adjunct Professor (Chemistry), IFAS, DC, AREC-Lake Alfred (1951-1957).

MOORE, G. ALEXANDER, JR., Ph.D. (Columbia University)
Associate Professor of Anthropology (1969-1970).

MOORE, G. PAUL, Ph.D. (Northwestern University)
Distinguished Service Professor and Acting Chairman, Department of Speech (1961-1977).

MOORE, JOHN EDWARD, Ph.D. (Ohio State University)
Professor (Animal Nutritionist), IFAS (1961-1973).

MOORE, ROBERT D., B.S.B.A.
Athletic Business Manager (1966-1973).

MOORE, THERAL ORVIS, Ph.D. (University of Missouri)
Associate Professor of Mathematics (1955-1966).

MOORE, WILLIAM H., M.S. (Auburn University)
Adjunct Assistant Professor, USDA Forest Service, IFAS (1976-1976).

MORELAND, ALVIN F., D.V.M. (University of Georgia)
Professor and Head, Division of Comparative Medicine, College of Veterinary Medicine (1963-1972).

MORGAN, ALICE ESTHER, M.Ed. (University of North Carolina)
Associate Professor of Education (1963-1977).

MORGAN, CHARLES FREDERICK, M. Arch. (U.C.L.A.)
Assistant Professor of Architecture (1976-1976).

MORGAN, JAMES I., Ed.D. (University of Florida)
Counseling Psychologist, University Counseling Center, Associate Professor of Behavioral Studies and Counselor Education (1967-1967).

MORGAN, MARGARET K., Ph.D. (University of Kentucky)
Associate Professor (1972-1976).

MORGAN, PHILIP BONE, Ph.D. (Kansas State College)
Professor of Entomology and Entomologist, USDA Entomology Research Laboratory (1965-1965).

MORGAN, WILLIAM H., Ph.D. (University of Florida)
Director, Water Resources Research Center, Professor of Environmental Engineering Sciences, and Affiliate Professor of Geography (1957-1973).

MORRILL, OLIVE LEMON, Ed.D. (Dacca University)
Assistant Dean and Professor, Home Economics Program, and Chairperson Home Economics Department, IFAS (1970-1970).

MORRIS, CHRISTINE M., M.Ed. (University of Florida)
Teacher, P. K. Yonge Laboratory School (1972-1972).

MORRIS, KEN, M.Ed. (University of Florida)
Coordinator, Department of Extended Services, Division of Continuing Education, Director of the School Service Center, College of Education (1965-1975).

MORRIS, MILTON E., Ph.D. (University of Wisconsin)
Professor and Chairperson, Editorial, IFAS (1976-1976).

MORRISON, CLAYTON ALLISON, M.S.E.
Associate Professor of Mechanical Engineering (1962-1976).

MORRISON, JAMES F., Ph.D. (Stanford University)
Associate Professor of Political Science (1966-1971).

MORSE, RICHARD HUGH, M.Arch. (Kansas State Univ.)
Associate Professor of Architecture and Director of Student Services (1967-1973).

MORTENSEN, JOHN ALAN, Ph.D. (Cornell University)
Professor (Geneticist), IFAS Agricultural Research and Education Center, Leesburg (1960-1977).

MOSCOVICI, CARLO, Ph.D. (Rome)
Professor of Pathology and Immunology and Medical Microbiology, VAH (1967-1973).

MOSKOVITZ, RICHARD A., M.D. (Harvard)
Assistant Professor of Psychiatry (1977-1977).

MOTT, GERALD OAKLEY, Ph.D. (Cornell University)
Professor of Agronomy, IFAS (1968-1968).

MOULDER, PETER V., M.D. (University of Chicago)
Professor of Surgery and Chief of Thoracic and Cardiovascular Surgery, VAH (1973-1973).

MOUNT, GARY ARTHUR, Ph.D. (Oklahoma State University)
Associate Professor (Associate Entomologist), IFAS, USDA (1966-1973).

MOXLEY, CLISBY CAREY, Ph.D. (University of Kentucky)
Professor, Food and Resource Economics Department, IFAS (1955-1961).

MOYE, HUGH ANSON, Ph.D. (University of Florida)
Associate Professor, (Associate Chemist), IFAS, (1965-1971).

MOZER, JAMES E., D.D.S. (Baylor College of Dentistry)
Assistant Professor of Operative Dentistry, College of Dentistry (1974-1974).

MUELLER, PAUL ALLEN, Ph.D. (Rice University)
Assistant Professor of Geology (1973-1973).

MUGA, MARVIN LUIS, Ph.D. (University of Texas)
Professor of Chemistry (1960-1976).

MULKEY, W. DAVID, Ph.D. (Clemson University)
Assistant Professor, Food & Resource Economics, IFAS (1977-1977).

MULL, LEON EDMUND, Ph.D. (Iowa State University)
Professor (Microbiologist), IFAS (1940-1956).

MULLEN, RUSSELL E., Ph.D. (Purdue University)
Assistant Professor of Abronomy, IFAS (1976-1976).

MULLINS, JOHN THOMAS, Ph.D. (University of North Carolina)
Professor of Botany, IFAS and Associate Chairperson of the Department of Botany (1959-1973).

MULLIS, ELVEN D., M.S. (University of Arkansas)
Captain, U.S. Air Force, Assistant Professor of Aerospace Studies (1974-1974).

MUNDY, BELVEY WASHINGTON, Ph.D. (University of Indiana)
Associate Professor of Physical Sciences (1955-1956).

MUNRO, ROBERT J., J.D. (University of Iowa)
Associate Law Librarian (1975-1975).

MUNSELLE, WILLIAM G., Ph.D. (Stanford University)
Assistant Professor of Political Science (1972-1974).

MUNSON, EDWIN S., M.D. (University of Tennessee)
Professor of Anesthesiology (1971-1971).

MUNSON, JOHN B., Ph.D. (University of Rochester)
Associate Professor and Graduate Coordinator of Neuroscience and Associate Professor of Physiology (1969-1974).

MUNYER, EDWARD ARNOLD, M.S.
Associate Curator in Education, Florida State Museum (1970-1975).

MURPHREE, ALBERT ALEXANDER, B.A. (Oxford University)
Associate Professor of English (1934-1955).

MURPHY, EDMUND J., M.D. (University of Nebraska)
Assistant Professor of Anesthesiology (1976-1976).

MURPHY, LIZETTE L., M.S. (University of Alabama)
Associate Professor (Extension Food Utilization Specialist), IFAS (1970-1975).

MURPHY, SUSAN KOSSUTH, Ph.D. (Yale University)
Assistant Research Scientist, IFAS (1977-1977).

MURPHY, THOMAS FROST, M.B.A. (California at Berkeley)
Director of Business Associates, College of Business Administration (1969-1969).

MURRAY, ERNEST DON, M.F.A., M.Ed.
Associate Professor of Humanities (1968-1974).

MUSCHLITZ, EARLE EUGENE, JR., Ph.D. (Penn. State Univ.)
Professor of Chemistry (1954-1958).

MUSGRAVE, CAROL ANN, Ph.D. (Oregon State University)
Assistant Professor (Assistant Entomologist), IFAS, (1974-1974).

MUTH, EGINHARD JOERG, Ph.D. (Polytechnic Institute of Brooklyn)
Professor of Industrial and Systems Engineering (1965-1974).

MUTHARD, JOHN E., Ph.D. (Ohio State University)
Professor and Chairperson of Rehabilitation Counseling and Head of Rehabilitation Research Institute (1967-1968).

MUTHER, THOMAS F., Ph.D. (University of Leeds)
Associate Professor of Pharmacology and Therapeutics (1963-1974).

MUZYCZKA, NICHOLAS, Ph.D. (Johns Hopkins University)
Assistant Professor of Immunology and Medical Microbiology (1977-1977).

MYERS, FOREST EARL, M.Ag. (University of Florida)
Professor (Assistant to the Dean), IFAS (1947-1973).•

MYERS, GARDINER, Ph.D. (University of California at Berkeley)
Associate Professor of Chemistry (1965-1972).

MYERS, JULIAN MOSTELLA, M.S.A. (University of Florida)
Professor (Agricultural Engineer), IFAS (1947-1960).

MYERS, LESTER H., Ph.D. (Purdue University)
Associate Professor, Food and Resource Economics Department, DC, IFAS (1968-1968).

MYERS, ROBERT BROWN, Ed.D. (University of Florida)
Professor and Chairperson of General Teacher Education (1952-1975).•

MYHRE, DONALD LAVERNE, Ph.D. (University of Wisconsin)
Professor and Center Director, Agricultural Research and Education Center, Belle Glade, IFAS (1975-1975).

MYRICK, ROBERT DEWAYNE, Ph.D. (Arizona State University)
Professor of Education (1967-1972).

NAGAN, WINSTON PERCIVAL, LL.M. (Duke University)
Associate Professor of Law (1975-1975).•

NATION, JAMES LAMAR, Ph.D. (Cornell University)
Professor of Entomology (1960-1972).

NATTRESS, JOHN ANDREW, D.E. (Embry-Riddle University)
Professor of Industrial and Systems Engineering; Associate Dean of the College of Engineering (1957-1965).

NATTRESS, MARGARET BICE, M.A. (Northwestern University)
Associate Professor of Speech (1969-1975).

NAYAR, JAI K., Ph.D. (University of Illinois)
Associate Professor (Associate Entomologist), IFAS (1975-1975).

NAYLOR, JOHN GEOFFRY, M.F.A.
Professor of Art (1959-1977).

NEAL, FRED CARLTON, D.V.M., M.S. (Texas A & M University)
Associate Professor (Associate Veterinarian), College of Veterinary Medicine-IFAS (1962-1966).

NEALE, JAMES RALPH, JR., Ed.D. (Columbia University)
Associate Professor of English (1946-1963).

NEEL, PERCY LANDRETH, IV, Ph.D. (University of California)
Assistant Professor (Assistant Ornamental Horticulturist), IFAS, Agricultural Research Center, Ft. Lauderdale (1974-1974).

NEHILEY, JAMES MICHAEL, M.A.J.C. (University of Florida)
Assistant Professor (Extension Communication Specialist), IFAS (1974-1974).

NEILSON, JOHN TAYLOR, Ph.D. (University of Glasgow)
Associate Professor (Associate Parasitologist), College of Veterinary Medicine-IFAS (1968-1973).

NELL, TERRIL ARNOLD, Ph.D. (Michigan State University)
Assistant Professor (Ornamental Horticulturist) (1976-1976).

NELSON, CHARLES WARREN, Ph.D. (University of Maryland)
Professor of Mathematics and Education (1966-1976).

NELSON, EDWARD W., M.D. (Tulane University)
Assistant Professor of Medicine (1974-1974).

NELSON, MARIE D., Ph.D. (University of Oregon)
Assistant Professor of English (1974-1974).

NELSON, ROBERT M., JR., M.D. (University of Washington)
Assistant Professor of Pediatrics (1976-1976).

NERIKAR, VASANT N., M.Sc. (Agri), M.L.A. (Harvard University)
Assistant Professor in Landscape Architecture (1973-1973).

NETZLOFF, MICHAEL L., M.D. (University of Florida)
Assistant Professor of Pediatrics and Director for Phenyl-Ketonuria Program (1973-1975).

NEVILL, D. D., Ph.D. (University of Florida)
Associate Professor of Psychology (1971-1977).

NEVILL, GALE ERWIN, JR., Ph.D. (Stanford University)
Professor of Engineering Sciences (1964-1968).•

NEVIS, ARNOLD HASTINGS, M.D. (Harvard University), Ph.D. (Massachusetts Institute of Technology)
Professor of Electrical Engineering and Biophysics (1960-1971).

NEW, MELVYN, Ph.D. (Vanderbilt University)
Professor of English (1966-1976).

NEWCOMB, ARTHUR PERRY, JR., Ph.D. (Stanford University)
Associate Professor of Education (1963-1963).

NEWELL, JOHN M., Ph.D. (University of Texas)
Professor of Education (1967-1972).

NEWMAN, ARTHUR J., Ed.D. (Indiana University)
Professor of Education (1968-1977).

NEWMAN, E. GUSTAVE, M.D. (Duke University)
Associate Professor of Psychiatry (1977-1977).

NEWMAN, ROBERT E., M.D. (George Washington University)
Assistant Professor of Psychiatry (1977-1977).

NEWTON, JANETTA W., B.D.S. (Edinburgh University) D.M.D. University of Alabama-Birmingham)
Assistant Professor of Oral Medicine; College of Dentistry (1974-1974).

NEYLANDS, NANCY A., B.S. (Medical College of Georgia)
Director, Medical Records Service, Shands Teaching Hospital (1976-1976).

NICHELSON, JACK C., M.F.A.
Associate Professor of Art (1961-1970).

NICHOLS, WILMER W., Ph.D. (University of Alabama)
Associate Professor of Medicine and Assistant Professor of Physiology (1974-1974).

NICKENS, JOHN MARCUS, Ph.D. (Florida State University)
Assistant Professor of Education (1971-1971).

NICOL, DAVID, Ph.D. (Stanford University)
Professor of Geology and Zoology (1965-1972).

NIDDRIE, DAVID LAWRENCE, Ph.D. (University of Manchester, England)
Professor of Geography (1966-1966).

NIGG, HERBERT NICHOLAS, Ph.D. (University of Illinois)
Assistant Professor (Assistant Entomologist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1974-1974).

NILES, JAMES A., Ph.D. (University of California-Davis)
Assistant Professor (Assistant Agricultural Economist), Food and Resource Economics Department, IFAS (1973-1973).

NOFFSINGER, JAMES ROBERT, M.S. (Florida State University)
Assistant Professor (Assistant in Meteorology), IFAS, NWS, Agricultural Research Center, Lakeland (1974-1974).

NOONAN, KENNETH D., Ph.D. (Princeton University)
Assistant Professor of Biochemistry and Molecular Biology (1973-1973).

NOONAN, NORINE E., Ph.D. (Princeton University)
Assistant Professor, College of Veterinary Medicine (1976-1976).

NORDEN, ALLAN JAMES, Ph.D. (Iowa State University)
*Professor of Agronomy, IFAS, (1958-1971).**

NORDLIE, FRANK GERALD, Ph.D. (University of Minnesota)
Professor of Zoology (1961-1976).

NORDSTEDT, ROGER ARLO, Ph.D. (Ohio State University)
Associate Professor (Associate Agricultural Engineer). IFAS (1969-1975).

NORMANN, SIGURD J., Ph.D., M.D. (University of Washington)
Professor and Chief of Cardiac Pathology (1968-1977).

NORTHROP, JAMES CLEMENT, Ed.D. (University of Florida)
Assistant Professor (Extension 4-H Youth Specialist), IFAS (1974-1974).

NOTELOVITZ, MORRIS, M.D. (University of Witwatersrand)
Assistant Professor of Obstetrics and Gynecology (1974-1976).

NOVAK, JERRY R., M.S. (Florida State University)
Lieutenant Colonel, U.S. Army, Professor of Military Science (1978-1978).

NOYES, WARD D., M.D. (University of Rochester)
Professor and Chief of Hematology (1961-1975).

NUERNBERGER, ANN B., M.Ed. (University of Florida)
Assistant in Education (1974-1974).

NUETZEL, WILLIAM ANDREW, M.S. (Purdue University)
Associate Professor of Health Education (1959-1969).

NUMMELA, ERIC CARL, Ph.D. (Tulane University)
Assistant Professor of Mathematics (1970-1970).

NUNEZ, THERON ALDINE, JR., Ph.D. (University of California)
Associate Professor of Anthropolgy (1963-1968).

NUNNERY, MICHAEL YATES, Ed.D. (University of Tennessee)
Professor of Education (1968-1968).

NYE, DAVID J., Ph.D. (University of Pennsylvania)
Assistant Professor of Insurance and Finance (1971-1971).

O'BANNON, JOHN HORATIO, Ph.D. (Arizona State University)
Professor (Nematologist), USDA, IFAS (1968-1968).

OBERLANDER, HERBERT, Ph.D.
Associate Professor (Associate Physiologist), USDA, IFAS (1971-1971).

OBERLIN, LYNN C., Ed.D. (Michigan State University)
Professor of Education (1970-1977).

OBLINGER, JAMES L., Ph.D. (Iowa State University)
Associate Professor (Associate Food Microbiologist), IFAS (1972-1977).

O'BRIEN, CHARLES WILLIAM, Ph.D. (Univ. of Calif., Berkeley)
Associate Professor (Associate Entomologist), (FAMU), IFAS (1972-1973).

O'BRIEN, THOMAS W., Ph.D. (Marquette University)
Associate Professor of Biochemistry and Molecular Biology (1964-1972).

O'CONNELL, JOHN PAUL, Ph.D. (University of California)
Professor of Chemical Engineering (1966-1974).

O'CONNOR, JOHN ARTHUR, M.A.
Associate Professor of Art (1969-1975).

O'CONNOR, MALLORY A., M.F.A.
Instructor in Art (1973-1975).

OCUMPAUGH, WILLIAM ROBERT, Ph.D. (University of Missouri)
Assistant Professor of Agronomy, IFAS (1975-1977).

ODUM, HOWARD THOMAS, Ph.D. (Yale University)
Graduate Research Professor of Environmental Engineering Sciences (1970-1970).

OHANIAN, MIHRAN JACOB, Ph.D. (Rensselaer Polytechnic Institute)
Professor of Nuclear Engineering Sciences and Chairperson of The Department (1963-1970).

O'HERN, RICHARD K., M.D. (Temple University)
Assistant Professor of Pediatrics (1977-1977).

OHRN, NILS YNGVE, Ph.D. (Uppsala)
Professor of Chemistry and Physics, Chairperson of Chemistry Department (1966-1977).

OLDACRE, SHERLEEN LOUISE, B.S. (University of Florida)
Assistant in Entomology, IFAS (1973-1973).

O'LEARY, JAMES P., M.D. (University of Florida)
Associate Professor of Surgery (1972-1975).

OLDFIELD, ELIZABETH A., M.Ed. (University of Florida)
Assistant in Psychiatry (1977-1977).

OLIVER, CALVIN CLEET, Ph.D. (Purdue University)
Professor of Mechanical Engineering and Professor of Engineering Sciences (1967-1967).

OLIVER, CLIFTON, JR., M.A. (Texas Technological College)
Associate Professor of Management (1946-1959).

OLIVER, JOHN PARKER, Ph.D. (Univ. of California at L. A.)
Associate Professor of Astronomy (1970-1977).

OLIVER-SMITH, ANTHONY RICHARD, Ph.D. (Indiana University)
Associate Professor of Social Sciences and Anthropology; Associate Curator of Ethnology (1972-1977).

OLSEN, ROBERT WINTHROP, B.S. (M.I.T.)
Professor (Biochemist) IFAS, AREC-Lake Alfred Educational Center, Lake Alfred, Arts & Sciences (1947-1947).

OLSON, TIMOTHY AANEN, Ph.D. (Iowa State University)
Assistant Professor, (Animal Breeding), IFAS (1977-1977).

OLSON, WALDEMAR, Ed.D. (University of Texas)
Professor of Education (1957-1967).

OLSSON, CARL NIELS, Ph.D. (University of Florida)
Associate Professor of Physical Sciences and Astronomy (1958-1972).

O'MALLEY, JOHN RICHARD, Ph.D. (University of Florida)
Professor of Electrical Engineering (1959-1973).

OMER, GUY CLIFTON JR., Ph.D. (California Institute of Tech.)
*Professor of Physics and Astronomy (1955-1972).**

ONODA, GEORGE Y., JR., Ph.D. (MIT)
Associate Professor of Materials Science and Engineering (1972-1973).

OPP, CARL BRADEN, J.D. (University of Florida)
Head, Off-Campus Housing, Division of Housing (1940-1955).

O'RAND, ANGELA M., Ph.D. (Temple University)
Assistant Professor of Sociology, Assistant Research Scholar, Center for Gerontological Studies and Programs (1976-1977).

O'RAND, MICHAEL G., Ph.D. (Temple University)
Assistant Professor of Veterinary Medicine and Anatomy (1975-1975).

ORSER, FRANK WILLIAM, M.S.
Associate Librarian and Assistant Chairperson, Acquisitions Department (1969-1969).

ORSER, LAWAN V., M.L.S. (Rutgers University)
Associate Librarian, IFAS (1970-1975).

ORTH, PAUL GERHARDT, Ph.D. (University of Wisconsin)
Assistant Professor (Assistant Soils Chemist), IFAS, Agricultural Research and Education Center, Homestead (1959-1959).

OSTERBIND, CARTER CLARKE, Ph.D. (American University)
Professor of Economics, Director of Bureau of Economic and Business Research and Director of Center for Gerontological Studies and Programs (1950-1961).

OSTOICH, MARK STEPHEN, M.M.
Assistant Professor of Music (1974-1977).

OSWALD, ANDREW JACKSON, B.S. (Troy State College)
Associate in Research Administration (Management), IFAS (1973-1973).

OTIS, ARTHUR B., Ph.D. (Brown University)
Professor and Chairperson, Department of Physiology (1956-1956).

OTT, EDGAR ALTON, Ph.D. (Purdue University)
Associate Professor (Associate Animal Nutritionist) IFAS, (1970-1970).

OTTE, JOHN A., M.S. (University of Illinois)
Assistant Professor (Area Farm Management Economist), Food and Resource Economics Department, IFAS, AREC, Bradenton (1976-1976).

OVERMAN, ALLEN RAY, Ph.D. (North Carolina State College)
Associate Professor (Associate Agricultural Engineer), IFAS, (1969-1974).

OVERMAN, AMEGDA JACK, M.S. (University of Florida)
Professor (Nematologist), IFAS, Agricultural Research and Education Center, Bradenton (1951-1973).

OWEN, DENNIS EDWARD, Ph.D. (Princeton University)
Assistant Professor of Social Sciences and Religion (1974-1974).

OZAKI, HENRY YOSHIO, Ph.D. (Cornell University)
Associate Professor (Associate Horticulturist), IFAS, Agricultural Research Center, Belle Glade, Morikami Farm, Delray Beach (1954-1954).

PACE, JAMES EDWARD, M.S.A. (University of Florida)
Professor (Animal Husbandman), IFAS (1942-1965).

PACKER, ATHOL B., Ph.D. (University of Kansas)
Associate Professor of Education (1967-1972).

PACTOR, H. SIDNEY, M.A.
*Assistant Professor of Journalism and Communications (1972-1974).**

PAFFORD, VIRGIE MELTON, M.P.H. (Univ. of North Carolina)
*Associate Professor, College of Nursing (1959-1965).**

PAGANINI, LOUIS ANTHONY, Ph.D. (University of Florida)
Assistant Professor of Geography (1968-1968).

PAIGE, ARNOLD, Ph.D. (University of California)
Associate Professor of Electrical Engineering and Speech (1966-1966).

PALENIK, GUS J., Ph.D. (University of Southern California)
Professor of Chemistry (1970-1972).

PALMER, ARNO ZANE, Ph.D. (University of Missouri)
Professor (Meat Scientist), IFAS (1955-1964).

PALMER, RICHARD DELRAY, Ed.D. (University of Florida)
Director, Treeo Center, Division of Continuing Education (1966-1974).

PALMORE, W. P., D.V.M. (Auburn University), Ph.D. (Yale University)
Associate Professor (Associate Physiologist), College of Veterinary Medicine-IFAS, (1974-1974).

PANIDES, WALLACE C., Ph.D. (Florida State University)
Assistant Professor of Social Work in Psychiatry (1976-1976).

PANUSH, RICHARD S., M.D. (University of Michigan)
Associate Professor of Medicine, VAH (1973-1977).

PANZIK, HAROLD L., Ph.D. (Arizona University)
Associate in Pharmacy (1971-1976).

PARKER, ROBERT B., D.V.M. (University of California at Davis)
Assistant Professor, College of Veterinary Medicine (1977-1977).

PARKER, WOODROE M., Ph.D. (University of Florida)
Assistant Professor of Education (1974-1977).

PARKINSON, MICHAEL THADDEUS, Ph.D. (University of Chicago)
Associate Professor of Physics (1969-1975).

PARRISH, FRED S., M.A.
*Assistant Professor of Journalism and Communications (1970-1973).**

PARRISH, JAMES BRYAN, B.S.B.A. (Univ. of Florida)
Director of Admissions (1963-1970).

PARTHENIADES, EMMANUEL, Ph.D. (University of California)
*Professor of Engineering Sciences and Professor of Coastal and Oceanographic Engineering (1968-1969).**

PATE, FINDLAY MOYE, Ph.D. (University of Georgia)
Associate Professor (Associate Animal Nutritionist), IFAS Agricultural Research and Educational Center, Belle Glade, (1970-1975).

PATRICK, J. CHRIS
Head Athletic Trainer (1970-1970).

PATTERSON, ELLEN, M.S.N. (University of Florida)
Instructor, College of Nursing (1977-1977).

PATTERSON, ELAM PUSEY, M.A.E.
Assistant Professor of Mechanical Engineering (1952-1956).

PATTERSON, RICHARD SHELDON, Ph.D. (Cornell University)
Associate Professor (Associate Entomologist), IFAS, USDA (1968-1973).

PATTON, THOMAS HUDSON, Ph.D. (University of Texas)
Associate Curator of Vertebrate Paleontology, Florida State Museum (1964-1976).

PAUL, HARRY W., Ph.D. (Columbia University)
Professor of History (1966-1973).

PAUL, PENELOPE B., M.S.N. (Boston University)
Assistant Professor, College of Nursing (1976-1976).

PAUL, WILLIAM L., M.D. (University of Kentucky)
Assistant Professor of Anesthesiology (1976-1976).

PEACOCK, FENTRESS MCCOUGHAN, M.S. (University of Florida)
Professor (Animal Husbandman), IFAS, Agricultural Research Center, ONA (1952-1977).

PEACOCK, HUGH ANTHONY, Ph.D. (Iowa State University)
Professor (Agronomist) and Center Director, IFAS, Agricultural Research Center, Jay (1973-1973).

PEEK, RALPH LEON, Ph.D. (University of Florida)
Associate Professor of Social Sciences and History (1963-1969).

PEET, L. KEN, M.S. (Georgia Technological University)
Associate Director, Division of Housing (1972-1977).

PEIFFER, ROBERT L., JR., D.V.M. (U. of Minnesota)
Assistant Professor, College of Veterinary Medicine (1977-1977).

PELLIZA, SUSAN M., Ph.D.
Assistant Professor of Art (1977-1977).

PENLAND, ARNOLD CLIFFORD, JR., M.Ed.
Associate Professor of Music (1970-1970).

PENNYPACKER, H. S. Ph.D. (Duke University)
Professor of Psychology (1962-1970).

PENROD, JOHN ARTHUR, Ph.D. (University of Pennsylvania)
*Professor of English (1950-1970).**

PEPINE, CARL J., M.D. (New Jersey College of Medicine)
Associate Professor of Medicine, VAH (1974-1975).

PEPINSKY, RAYMOND, Ph.D. (University of Chicago)
Professor of Physics and Materials Science Engineering Electrical Engineering (1968-1973).

PEREZ, FERMIN LUIS, LL.D. (University of Havana)
Assistant Law Librarian (1967-1968).

PERKINS, BENJAMIN DAVID, Ph.D. (University of Hawaii)
Adjunct Assistant Professor, IFAS (1972-1972).

PERKINS, HAVEN M., M.D. (University of Louisville)
Professor of Anesthesiology (1959-1972).

PERKINS, JIMMY C., B.S.
Assistant to the Graduate Dean and Assistant to the Director of Sponsored Research (1950-1973).

PERLETTE, JOHN M., Ph.D. (University of Chicago)
Assistant Professor of English (1973-1974).

PERRIN, JOHN HENSTOCK, Ph.D. (University of London)
Professor of Pharmacy and Associate Chairman, (Pharmacy (1976-1976).

PERRY, NATHAN WARREN, Ph.D. (Florida State University)
Professor and Chairman of Clinical Psychology and Professor of Psychology (1963-1977).

PERRY, VERNON G., Ph.D. (University of Wisconsin)
Professor and Acting Assistant Dean for Research, (Nematologist), IFAS (1959-1959).

PERSON, WILLIS BAGLEY, Ph.D. (University of California)
Professor of Chemistry (1966-1966).

PESEK, JOSEPH A., M.D. (University of Miami)
Assistant Professor of Pediatrics (JHEP) (1974-1974).

PETERS, DONALD C., J.D. (University of Iowa)
Associate Professor of Law (1973-1975).

PETERS, WAYNE L., M.D. (University of Colorado)
Assistant Professor of Medicine, JHEP (1977-1977).

PETERS, WILLIAM LEE, Ph.D. (University of Utah)
Professor (Entomologist), (FAMU), IFAS (1973-1973).

PETERSON, LENNART RUDOLPH, P.D. (Massachusetts Institute of Technology)
Associate Professor of Physical Sciences and Physics (1967-1972).

PETRUS, DONALD R., M.S.
Adjunct Assistant in Chemistry, IFAS, DC, AREC-Lake Alfred (1968-1970).

PETTWAY, RICHARD H., Ph.D. (Univ. of Texas at Houston)
Associate Professor of Finance (1970-1970).

PETTY, ROY WILLIAM, M.D. (University of Arkansas)
Assistant Professor of Orthopaedic Surgery (1975-1975).

PEVONKA, M. PETER, M.S.P.
Assistant Professor of Pharmacy (1973-1973).

PEYTON, LLEWELLYN C., D.V.M., (University of Minnesota)
Assistant Professor, College of Veterinary Medicine (1977-1977).

PFAFF, WILLIAM W., M.D. (University of Buffalo)
Professor of Surgery and Director, Transplantation Program, JHMHC (1965-1977).

PHILIPS, SANDRA LOUISE, M.A. (Southeastern Louisiana Univ.)
Instructor of Physical Education (1973-1973).

PHILLIPS, RICHARD LEE, Ph.D. (Michigan State University)
Associate Professor (Extension Horticulturist), IFAS Agricultural Research and Education Center, Homestead (1964-1972).

PHILLIPS, SHIRLEY, M.S. (University of Kansas)
Instructor, P. K. Yonge Laboratory School (1974-1976).

PICKARD, JOHN BENEDICT, Ph.D. (University of Wisconsin)
Professor of English, Graduate Coordinator (1963-1968).

PIECZARKA, DAVID J., Ph.D. (Cornell University)
Assistant Professor (Assistant Plant Pathologist), IFAS Agricultural Research and Education Center, Belle Glade (1977-1977).

PIERCE, DAVID RATCLIFFE, M.B.A. (University of Florida)
Assistant Professor of Building Construction (1974-1974).

PIERCE, FRANK N., Ph.D. (University of Illinois)
Professor of Journalism and Communications (1972-1972).

PIERCE, JAMES ROBERT, J.D. (University of Florida)
Associate Professor of Law (1968-1971).

PIERCE, JO ANN BELL, M.A. (University of Missouri)
Assistant Professor, IFAS Editorial (1974-1974).

PIERCE, PATRICIA, M.S.N. (Vanderbilt University)
Assistant Professor, College of Nursing (1977-1977).

PIERCE, ROBERT N., Ph.D. (University of Minnesota)
*Professor of Journalism and Communications (1970-1976).**

PIERCE, ROBERT WILLIAM, JR., Ph.D. (University of Illinois)
Associate Professor of Geology (1969-1974).

PIERINGER, ARTHUR PAUL, Ph.D. (Cornell University)
Associate Professor (Associate Horticulturist), IFAS Agricultural Research and Educational Center, Lake Alfred (1956-1972).

PIERSON, K. KENDALL, M.D. (New York University)
Professor and Chief of Anatomical Pathology, Assistant Dean for Clinical Affairs, and Chief of Staff, Shands (1968-1974).

PIOTROWSKI, GEORGE, Ph.D. (Case Western Reserve University)
Associate Professor of Orthopaedic Surgery; Associate Professor of Mechanical Engineering (1969-1976).

PIRKLE, EARL C., Ph.D. (University of Cincinnati)
Professor of Physical Sciences and Geology and Chairperson of the Department of Physical Sciences (1950-1972).

PISANI, JOSEPH R., Ph.D. (University of Maryland)
Professor of Journalism and Communications (1973-1977).

PITTS, JAMES H., Ph.D. (University of Northern Colorado)
Assistant Professor of Behavioral Studies, and Counselor Education (1971-1971).

PLANT, CHRISTINE., M.A. (University of South Florida)
Instructor, P. K. Yonge Laboratory School (1974-1976).

PLEASANTS, JULIAN MCIVER, Ph.D. (Univ. of North Carolina)
Assistant Professor of Social Sciences and History (1969-1969).

PLOWMAN, FAYE T., M.A. (Michigan State University)
Assistant Professor (Housing Specialist) Home Economics, IFAS (1972-1972).

PLUTZKY, MAXIMO, M.D. (Havana University)
Professor of Psychiatry (1968-1975).

PLYLER, CRANFORD O., JR., M.D. (George Wash. U.)
Associate Professor of Community Health and Family Medicine, JHEP (1976-1976).

POE, SIDNEY LAMARR, M.S. (University of Missouri)
Associate Professor (Associate Entomologist) Center for Environmental Programs, IFAS (1969-1974).

POHLHAUSEN, KARL, Ph.D. (University Gottingen)
Professor of Engineering Sciences (1972-1972).

POHRONEZNY, KENNETH LOUIS, Ph.D. (Ohio State University)
Assistant Professor (Assistant Research Scientist), IFAS Agricultural Research and Education Center, Homestead (1976-1976).

POLACK, FRANK M., M.D. (San Marcus University, Peru)
Professor of Ophthalmology (1967-1974).

POLOPOLUS, LEONIDAS, Ph.D. (University of California, Berkeley)
Professor (Economist) and Chairperson, Food and Resource Economics Department, IFAS (1965-1973).

PONIKVAR, CATHERINE A., M.A. (Bowling Green University)
Residence Life Coordinator, Student Housing (1975-1975).

POOLE, REID, M.A.
Professor of Music (1949-1962).

POOLE, RICHARD TURK, Ph.D. (University of Florida)
Professor (Plant Physiologist), IFAS, Agricultural Research Center, Apopka (1961-1975).

POPE, NOLAN FRANK, M.L.S. (Rutgers University)
Assistant Librarian, Reference and Bibliography (1975-1975).

POPENOE, HUGH LLYWELYN, Ph.D. (University of Florida)
Director of International Programs in Agriculture; Director of Center for Tropical Agriculture; Professor of Soils, Geography, Botany, Agronomy; Acting Director of Center for Aquatic Sciences; Director of SUS Sea Grant College.

POPOV, VASILE MIHAI, Ph.D. (Power Institute of The Romanian Academy)
Professor of Mathematics (1972-1973). Professor of Mathematics and Electrical Engineering (1972-1973).

POPP, DANIEL M., Ph.D. (University of Chicago)
Associate Professor of German and Scandinavian (1973-1977).

POPP, JAMES ALAN, Ph.D. (University of California)
Assistant Professor of Pathology College of Veterinary Medicine-IFAS (1974-1974).

POPPELL, J. EDWARD, B.S. (Florida State University)
Assistant Director of Finance and Accounting (1971-1975).

POPPER, EDWARD T., Ph.D. (Harvard)
Assistant Professor of Marketing (1977-1977).

POP-STOJANOVIC, ZORAN RISTA, Ph.D. (Belgrade)
Associate Chairperson and Professor of Mathematics (1965-1968).

PORRO, BARBARA G., M.A. (University of Florida)
Teacher, P.K. Yonge Laboratory School (1976-1976).

POSNER, PHILIP, Ph.D. (State University of New York)
Associate Professor of Physiology (1972-1977).

POST, DON MCKENZIE, M.S.F. (University of Florida)
Associate Professor (Timber Harvesting), IFAS (1951-1976).

POTTER, WILLIAM MELVILLE, M.A.
Assistant Professor of Physical Education (1946-1946).

POWELL, WILLIAM R., Ed.D. (Indiana University)
Professor of Education (1974-1974).

POWERS, KATHRYN L., J.D. (University of Florida)
Associate Professor (1975-1975).

POZZETTA, GEORGE E., Ph.D. (Univ. of North Carolina)
Associate Professor of Social Sciences and History, Adviser (1971-1976).

PRESTON, JAMES F., Ph.D. (University of Minnesota)
Associate Professor, Microbiology and Cell Science, IFAS (1969-1975).

PREVIC, EDWARD P., Ph.D. (University of Illinois)
Medical Associate Professor, Microbiology and Cell Science, IFAS (1965-1966).

PRICE, GEORGE DODDS, Ph.D. (University of Florida)
Associate Research Scientist, IFAS, (1975-1975).

PRICE, JOHN WILBUR, Ph.D. (University of Michigan)
Associate Professor of Humanities (1961-1970).

PRIMACK, ROBERT B., Ed.D. (Rutgers University)
Associate Professor of Education (1966-1973).

PRINE, GORDON MADISON, Ph.D. (Ohio State University)
Associate Professor of Agronomy, IFAS (1958-1965).

PRING, DARYL ROGER, Ph.D. (North Dakota State)
Associate Professor (Associate Plant Pathologist), USDA, IFAS (1971-1971).

PRITCHETT, WILLIAM LAWRENCE, Ph.D. (Iowa State University)
*Professor of Soil Science (Soil Chemistry), IFAS (1948-1953).**

PROBERT, WALTER, S.J.D. (Yale University)
Professor of Law (1959-1960).

PROCHASKA, FREDERICK JAMES, Ph.D. (North Carolina St. Univ.)
Associate Professor, Food and Resource Economics, IFAS (1970-1975).

PROCTOR, SAMUEL, Ph.D. (University of Florida)
Distinguished Service Professor of History and Social Sciences; Julien C. Yonge Professor of Florida History; Curator of History, Florida State Museum (1946-1974).

PRUGH, PETER EUGENE, M.Arch. (Harvard)
Assistant Professor of Architecture (1974-1976).

PURCIFULL, DAN ELWOOD, Ph.D. (University of California)
Professor (Plant Pathologist), IFAS (1964-1975).

PURDY, BARBARA ANN, Ph.D. (University of Florida)
Associate Professor of Social Sciences and Anthropology, Research Associate, Florida State Museum (1971-1976).

PURDY, LAURENCE HENRY, Ph.D. (University of California)
Professor and Chairperson, Department of Plant Pathology, Institute of Food and Agricultural Sciences (1967-1967).

PURPURA, JAMES A., M.S.E.
Professor of Coastal and Oceanographic Engineering, Professor of Engineering Sciences (1958-1973).

PURSLEY, LOUANN W., M.Ed. (University of Houston)
Assistant Professor of Medical Technology (1975-1977).

PURVIS, ALBERT COLUMBUS, Ph.D. (University of Illinois)
Assistant Professor (Assistant Plant Physiologist), IFAS Agricultural Research and Education Center, Lake Alfred (1977-1977).

PYATT, EDWIN EUGENE, D.Eng. (Johns Hopkins University)
Professor of Environmental Engineering Sciences and Chairman of the Department (1965-1970).

PYE, RUBY LEE, M.A.
Assistant Professor of Physical Education (1949-1954).

PYLE, DAVID DALE, Ed.D. (Ball State University)
Assistant Professor (Extension 4-H Youth Specialist), IFAS (1976-1976).

QUARLES, JAMES C., J.D. (University of Virginia)
Professor of Law (1969-1969).

QUESENBERRY, KENNETH HAYS, Ph.D. (University of Kentucky)
Assistant Professor (Assistant Agronomist), IFAS (1975-1975).

QUISLING, RONALD G., M.D. (University of Wisconsin)
Assistant Professor of Radiology (1976-1976).

RABELL, ROSA B., M.Ed. (University of Florida)
Instructor, P. K. Yonge Laboratory School (1966-1970).

RABINOWICZ, I. MATTHEW, M.D. (Westminster Hospital, London)
Assistant Professor of Ophthalmology and Pediatrics (1975-1975).

RADCLIFFE, ROBERT C., Ph.D. (Ohio State University)
Associate Professor of Finance (1971-1976).

RALEIGH, GEORGE JOSEPH, Ph.D. (Cornell University)
Professor (Horticulturist), Florida Lettuce, Inc., IFAS, Agricultural Research and Educational Center, Belle Glade (1970-1970).

RAMBO, PATRICIA B., B.S. (Florida International University)
Assistant to the President for International Programs (1973-1977).

RAMEY, ROBERT ANCEL, JR., D.Sc. (University of Cincinnati)
Professor of Electrical Engineering; Associate Dean, College of Engineering, Associate Director, Engineering and Industrial Experiment Station (1966-1977).

RAMIREZ, ADOLFO, Ph.D. (University of Wisconsin)
Associate Professor of Spanish (1948-1975).

RAND, COLLEEN S. W., Ph.D. (Stanford University)
Assistant Professor of Clinical Psychology in Psychiatry (1977-1977).

RAND, KENNETH H., M.D. (Stanford University)
Assistant Professor of Medicine and Pathology (1977-1977).

RANDAZZO, ANTHONY FRANK, Ph.D. (University of N. Carolina)
Assistant Director, Division of Sponsored Research and Professor of Geology (1967-1977).

RANGE, ANTHONY J., B.S. (Florida A & M University)
Residence Life Coordinator, Division of Housing (1976-1976).

RAO, KOPPAKA V., Ph.D. (University of Wisconsin)
Professor of Pharmaceutical Chemistry, College of Pharmacy (1969-1969).

RAO, PEJAVER VISHWAMBER, Ph.D. (University of Georgia)
Professor of Statistics (1965-1969).

RASBURY, WILEY C., Ph.D. (Bowling Green State University)
Associate Professor of Clinical Psychology and Psychology (1971-1977).

RATHBUN, FRANK F., M.A.
Assistant Professor of Journalism and Communications (1968-1968).

RATLIFF, HUGH DONALD, Ph.D. (Johns Hopkins University)
Professor of Industrial and Systems Engineering (1970-1976).

RAY, DELMAS DENNIS, Ph.D. (U. of Florida), C.P.A. (Florida)
Professor of Accounting (1948-1962).

RAY, JORDAN BOON, JR., J.D. (University of Florida)
Professor of Business Law (1962-1975).

REDDISH, ROBERT LEE, Ph.D. (Texas A & M University)
Professor (Meats Specialist) IFAS (1955-1972).

REED, LAMBERT S., B.A. (Morris Brown College)
Assistant Football Coach (1975-1975).

REED-HILL, ROBERT ELLIS, D.Sc. (Yale University)
*Professor of Materials Science and Engineering (1960-1964).**

REESE, ROBERT LEWIS, Ph.D. (University of Florida)
Assistant Professor (Assistant Horticulturist) IFAS, Agricultural Research and Educational Center, Lake Alfred, (1963-1966).

REEVES, FRANK BLAIR, M.A. Arch. (University of Florida)
Professor of Architecture (1949-1968).

REGALADO, MANUEL F., M.D. (Havana University)
University Physician (1975-1975).

REGNA, JOSEPH LOUIS, M.A. (New York University)
Associate Professor of Recreation (1961-1976).

REICHARD, CARY LAYNE, Ed.D. (Colorado State University)
Associate Professor of Education (1969-1974).

REID, CHARLES EDWARD, Ph.D. (Louisiana State University)
Associate Professor of Chemistry (1948-1955).

REID, WILLIAM R., Ph.D. (Iowa State University)
Professor of Education (1969-1969).

REILLY, CATHERINE J., M.N. (University of Florida)
Instructor, College of Nursing (1976-1976).

REINERT, JAMES ARNOLD, Ph.D. (Clemson University)
Associate Professor (Associate Entomologist), IFAS, Agricultural Research Center, Ft. Lauderdale (1970-1975).

REISKIND, JONATHAN, Ph.D. (Harvard University)
Associate Professor of Zoology (1967-1972).

REITH, EDWARD J., Ph.D. (New York University)
Professor of Basic Dental Sciences, College of Dentistry, and Professor of Anatomy, College of Medicine (1972-1972).

REITZ, CLAIR D., D.D.S. (University of Pennsylvania)
Professor of Operative Dentistry, College of Dentistry (1976-1976).

REITZ, H. JOSEPH, Ph.D. (MIT)
Professor of Management (1973-1976).

REITZ, HERMAN J., Ph.D. (Ohio State University)
Professor (Horticulturist and Center Director) IFAS, AREC-Lake Alfred (1946-1957).

REKERS, GEORGE A., Ph.D. (U.C.L.A.)
Associate Professor of Psychology in Psychiatry (1977-1977).

REMSEN, JOYCE F., Ph.D. (Rutgers University)
Assistant Research Professor of Biochemistry and Molecular Biology (1971-1975).

RENNER, RICHARD ROY, Ph.D. (University of Texas)
Professor of Education (1965-1971).

RENTZ, DELORIS E., M.Ed. (University of Florida)
Instructor, P.K. Yonge Laboratory School (1977-1977).

RENZ, JAMES HENRY, A.M.L.S.
Associate Director of Libraries (1970-1976).

RESNICK, JAQUELYN LISS, Ph.D. (University of Florida)
Counseling Psychologist, Assistant Professor of Behavior Studies (1970-1974).

RESNICK, MICHAEL B., Ed.D. (University of Florida)
Instructor in Pediatrics (1976-1976).

RESTER, JAMES HARVEY, M.D. (Louisiana State University)
University Physician (1978-1978).

REYNOLDS, JOHN EVERETT, Ph.D. (Iowa State University)
Associate Professor, Food and Resource Economics, IFAS (1966-1971).

REYNOLDS, RICHARD C., M.D. (Johns Hopkins University)
And Family Medicine, Professor of Latin American Studies and Acting Director of Family Practice Residency Program (1968-1976).

RHINE, LEONARD, M.L.S.
Assistant Librarian, J. Hillis Miller Health Center Library (1973-1975).

RHINES, FREDERICK NIMS, Ph.D. (Yale University)
Distinguished Service Professor of Materials Science and Engineering (1959-1973).

RHOADES, FREDERICK MILTON, Ph.D. (Mississippi State College)
Associate Professor (Associate Soils Chemist), IFAS, Agricultural Research and Education Center, Quincy (1966-1973).

RHOADES, HARLAN L., Ph.D. (University of Illinois)
Professor (Nematologist), IFAS, Agricultural Research and Education Center, Sanford (1959-1973).

RHOTON, ALBERT L., JR., M.D. (Washington University)
Professor of Surgery and Chief of Neurological Surgery (1972-1973).

RHUE, ROY DEAN, Ph.D. (Oregon State University)
Assistant Professor of Soil Science, (Fertilizer and Lime Technology), IFAS (1977-1977).

RICE, EDWIN RAY, BSA, (University of Florida)
Assistant Professor (Assistant Agronomist), Agricultural Research and Education Center, Belle Glade, IFAS, USDA.

RICE, JAMES H., III, B.S. (Oklahoma Panhandle State University)
Captain, U.S. Army, Assistant Professor of Military Science (1978-1978).

RICE, MIRIAM WAGNER, Ph.D. (Cornell University)
Assistant Professor of Spanish (1973-1973).

RICE, PRUDENCE, M., Ph.D. (Pennsylvania State University)
Assistant Professor of Anthropology (1976-1976).

RICH, JIMMY RAY, Ph.D. (University of California, Riverside)
Assistant Professor (Assistant Nematologist), IFAS, Agricultural Research Center, Live Oak (1976-1976).

RICHARD, GEORGE A., M.D. (University of Pittsburgh)
Professor of Pediatrics and Chief of Renal Division (1967-1975).

RICHARDS, PAMELA S., Ph.D. (Northwestern University)
Assistant Professor of Sociology (1976-1976).

RICHARDSON, JAMES GILBERT, M.A. (University of Florida)
Associate Professor of Finance (1946-1957).

RICHIE, NICHOLAS DAN, Ph.D. (University of Michigan)
Assistant Professor of Health and Hospital Administration (1974-1974).

RICHTER, MICHAEL FRANK, Ph.D. (University of Florida)
Assistant Professor (Assistant Animal Nutritionist) Agricultural Research Center, ONA (1977-1977).

RICHTER, RONALD L., Ph.D. (Texas A & M University)
Associate Professor (Extension Dairy Technologist), IFAS (1972-1976).

RIENZO, BARBARA ANN, Ph.D. (Southern Illinois University)
Assistant Professor of Health Education (1977-1977).

RIDGDILL, GARY DALE, M.Arch. (M.I.T.)
Associate Professor of Architecture (1972-1977).

RIDGE, MARGARET BURNS, M.L.S.
Associate Librarian, Catalog (1969-1974).

RIDINGS, WILLIAM H., Ph.D. (North Carolina State University)
Assistant Professor (Assistant Plant Pathologist), IFAS (1971-1971).

RIEKERK, HANS, Ph.D. (University of Washington)
Assistant Research Scientist, IFAS (1977-1977).

RIGDON, IMOGENE, M.S.N. (Catholic University)
Instructor, College of Nursing (1977-1977).

RIGGALL, FRANK C., M.D. (West Virginia University)
Assistant Professor of Obstetrics and Gynecology (1976-1977).

RIGGIOLA, MARY LORETTO, B.S. (University of Houston)
Systems Coordinator (1973-1976).

RIKER, HAROLD CLARK, Ed.D. (Columbia University)
Professor of Education (1938-1972).

RING, WADE, M.Ed. (University of Georgia)
Instructor, P. K. Yonge Laboratory School (1958-1962).

RION, WILLIAM E., M.A.
*Director of J. Wayne Reitz Union (1945-1948).**

RITTER, GERHARD X., Ph.D. (University of Wisconsin)
Associate Professor of Mathematics (1971-1976).

RITTER, GRANT ALDEN, Ph.D. (Cornell University)
Assistant Professor of Mathematics (1976-1976).

ROAN, VERNON PARKER, Ph.D. (University of Illinois)
Professor of Mechanical Engineering (1966-1973).

ROBBINS, CHARLES LEWIS, M.S. (Iowa State University)
Assistant Professor and Associate Chairperson, Department of Sociology (1956-1976).

ROBBINS, MARILYN J., B.S. (Iowa State University)
Associate in Psychiatry (1970-1973).

ROBBINS, RALPH COMPTON, Ph.D. (University of Illinois)
*Associate Professor (Associate Human Nutritionist), IFAS, (1959-1966).**

ROBERTS, BENJAMIN J., Ph.D. (Pennsylvania State University)
Assistant Professor of Psychology (1977-1977).

ROBERTS, DANIEL ALTMAN, Ph.D. (Cornell University)
Professor of Plant Pathology, IFAS (1959-1964).

ROBERTS, LEONIDAS HOWARD, Ph.D. (University of Florida)
Professor of Physical Sciences and Astronomy; Adviser (1949-1971).

ROBERTS, RAYMOND BLAINE, Ph.D. (Iowa State University)
Associate Professor of Economics (1970-1974).

ROBERTS, RICHARD H., Ph.D. (University of Wisconsin)
Adjunct Professor, IFAS (1976-1976).

ROBERTS, ROBERT MICHAEL, Ph.D. (Oxford University)
Professor of Biochemistry and Molecular Biology (1970-1976).

ROBERTSON, MARY F., M.A. (University of Toronto)
Associate in Psychiatry (1970-1970).

ROBERTSON, WILLIAM KITCHENER, Ph.D. (Purdue University)
Professor of Soil Science (Soil Chemistry), IFAS (1950-1965).

ROBINSON, FRANK ALBERT, M.S. (Auburn University)
Professor (Apiculturist), IFAS (1950-1973).

ROBINSON, JAMES DANIEL, Pharm.D. (University of Cincinnati)
Assistant Professor of Pharmacy (1977-1977).

ROBINSON, WILLIAM RONALD, Ph.D. (Ohio State University)
Professor of English (1967-1971).

ROCKWOOD, DONALD L., Ph.D. (North Carolina State University)
Assistant Professor, (Forest Geneticist), IFAS (1974-1975).

ROCKWOOD, WILLIAM PECK, M.A. (School of Advanced International Studies of Johns Hopkins University)
Coordinator, Department of Extended Services, Division of Continuing Education (1973-1973).

RODEHEAVER, JANET LITTLE, M.Ed. (University of Florida)
Assistant Professor of Medical Technology (1961-1967).

RODGERS, BRADLEY M., M.D. (Johns Hopkins University)
Associate Professor of Surgery and Pediatrics (1974-1976).

RODGERS, EARL GILBERT, Ph.D. (Iowa State University)
Professor of Agronomy, IFAS (1946-1959).

ROESSLER, CHARLES E., Ph.D. (University of Florida)
Associate Professor of Environmental Engineering Sciences (1967-1973).

ROESSLER, GENEVIEVE S., Ph.D. (University of Florida)
Assistant Professor of Nuclear Engineering Sciences (1973-1975).

ROGERS, ANDREW J., Ph.D. (University of Maryland)
Professor of Entomology, IFAS (1971-1971). Laboratory, IFAS (1971-1971).

ROGERS, CLARENCE J., M.Ag. (University of Florida)
Professor (Agricultural Engineer), IFAS (1953-1975).

ROGERS, JAMES SAMUEL, Ph.D. (University of Illinois)
Assistant Professor, Agricultural Engineering, USDA, IFAS (1968-1968).

ROHLOFF, SYLVIA, M.S.N. (State University of New York)
Assistant Professor, College of Nursing (1977-1977).

ROLF, ROBERT T., Ph.D. (University of Hawaii)
Assistant Professor of Japanese (1975-1975).

ROMRELL, LYNN J., Ph.D. (Utah State University)
Assistant Professor of Veterinary Medicine and Anatomy (1975-1975).

RONK, STERLING L., D.D.S., M.S. (West Virginia University)
Assistant Professor of Pediatric Dentistry, College of Dentistry (1977-1977).

ROOKS, EVELYN ANN, M.H.E.
Assistant Professor (Extension Human Development Specialist) IFAS (1969-1969).

ROOSENRAAD, JON A., Ph.D. (Florida State University)
*Associate Professor of Journalism and Communications (1968-1977).**

ROQUE, JUAN L., M.D. (University of Sevilla Medical School)
Assistant Professor of Medicine, JHEP (1973-1973).

ROSENBAUM, WALTER A., Ph.D. (Princeton University)
*Professor of Political Science (1961-1975).**

ROSENBLOOM, ARLAN L., M.D. (University of Wisconsin)
Professor of Pediatrics and Director of Clinical Research Center (1968-1975).

ROSENSHEIN, JOSEPH S., Ph.D. (M.I.T.)
*Director of Pre-Professional Education and Lecturer in Physics (1966-1974).**

ROSENSTIEL, STEPHEN F., M.S.D. (Indiana University)
Assistant Professor of Occlusion and Fixed Prosthodontics, College of Dentistry (1977-1977).

ROSS, CLAUDIUS ALLEN, Ph.D. (University of Florida)
Professor of Engineering Sciences, Eglin AFB (1969-1976).

ROSS, JOHN J., M.D. (Harvard University)
Professor of Pediatrics and Neurology (1965-1974).

ROSS, MICHAEL H., Ph.D. (New York University)
Professor and Chairperson, Department of Anatomy (1971-1977).

ROTHMAN, HOWARD BARRY, Ph.D. (Stanford University)
Associate Professor of Speech (1969-1976).

ROTHWELL, DONALD FREDERICK, Ph.D. (Purdue University)
Professor of Soil Science (Soil Microbiology), IFAS (1948-1971).

ROUSEFF, RUSSELL LEE, Ph.D. (University of Georgia)
Adjunct Assistant Professor (Assistant Chemist) IFAS, DC, AREC-Lake Alfred (1974-1974).

ROVINSKY, TONY, P.A. (University of Florida)
Assistant Hospital Director, Renal Services, Shands Teaching Hospital & Clinics (1974-1977).

ROW, ANDREW WILLIAM, M.A. (University of Michigan)
Instructor in Mathematics (1958-1958).

ROWE, MARY BUDD, Ph.D. (Stanford University)
Professor of Education (1972-1974).

RUBIN, MELVIN L., M.D. (University of California)
Professor of Ophthalmology, Chief of Retinal Disease Center, and Director of Resident Training Program (1963-1975).

RUBIN, STEPHEN, J.D. (Columbia University)
Professor of Law (1972-1977).

RUELKE, OTTO CHARLES, Ph.D. (University of Wisconsin)
Professor of Agronomy, IFAS (1955-1969).

RUFFIN, WILLIAM CAIN, JR., M.D. (Univ. of North Carolina)
Acting Chairman, Department of Opthalmology and Professor of Psychiatry (1959-1977).

RUIZ, NATHAN CHARLES, M.A.
Assistant Professor in Art (1973-1976).

RUMBLE, JAMES DOUGLAS, M.S.M.E. (Rensselaer Polytechnic Institute)
Associate Professor of Civil Engineering (1975-1975).

RUMMEL, RAYMOND ALFRED, B.S.
Assistant Professor of Materials Science and Engineering (1959-1967).

RUSCHHAUPT, DAVID G., M.D. (University of Chicago)
Assistant Professor of Pediatrics (JHEP) (1975-1975).

RUTAN, FRED MURRAY, M.S. (Springfield College)
Chairperson and Professor, Department of Physical Therapy (1961-1973).

RUTH, BYRON EDWARD, Ph.D. (West Virginia University)
Professor of Civil Engineering (1970-1977).

RYAN, MARY PATRICIA, M.A.
Assistant Professor of Physical Education (1969-1969).

RYDEN, SALLY E., M.D. (University of Michigan)
Assistant Professor of Pathology, Medical Director of Blood Bank (1976-1976).

RYSCHKEWITSCH, GEORGE EUGENE, Ph.D. (Ohio State University)
Professor of Chemistry (1956-1965).

SABATELLA, JOSEPH J., M.F.A. (University of Illinois)
Dean, College of Fine Arts and Professor of Art (1959-1975).

SABIN, JOHN R., Ph.D. (University of New Hampshire)
Professor of Physics and Chemistry (1970-1977).

SAGA-RUMLEY, SEGUNDINA A., M.D. (University of Philippines)
Assistant Professor of Anesthesiology, VAH (1973-1973).

SAILER, REECE I., Ph.D. (Kansas University)
Graduate Research Professor, Entomology and Nematology Department, IFAS (1973-1973).

SAINE, THOMAS JEFFERSON, III, Ph.D. (Northwestern University)
Associate Professor of Speech (1972-1977).

SAMUEL, JOHN ALTON, M.S.E.
Associate Professor of Mechanical Engineering (1954-1967).

SAND, ROBERT SHERMAN, Ph.D. (University of Kentucky)
Assistant Professor (Assistant Animal Husbandman) IFAS (1971-1971).

SANDEEN, C. ARTHUR, Ph.D. (Michigan State University)
Vice President for Student Affairs & Professor of Education (1973-1973).

SANDEFUR, WAYNE THOMAS, H.S.D. (University of Indiana)
Professor of Health Education (1953-1963).

SANDERS, LINDA W., M.A.Arch. (University of Florida)
Assistant Professor of Architecture (1974-1975).

SANDERS, WILLIE, B.S.E. (University of Florida)
Assistant Professor of Anatomy and Occupational Therapy and Director of State Anatomical Board and Office of Minority Relations (1968-1976).

SANDERSON, JOHN ALLEN, M.U.P. (Wayne State University)
Associate Professor of Landscape Architecture (1969-1974).

SANDOR, GEORGE NASON, D.Eng.Sc. (Columbia University)
Research Professor of Mechanical Engineering (1976-1976).

SANTOLI, C. MICHAEL, B.I.E. (North Carolina State Univ.)
Coordinator of Cooperative Education, Division of Continuing Education (1976-1976).

SARTAIN, JERRY B., Ph.D. (North Carolina State University)
Assistant Professor of Soil Science (Soil Fertility), IFAS (1974-1974).

SATZ, PAUL, Ph.D. (University of Kentucky)
Professor of Clinical Psychology and Psychology (1963-1967).

SAULS, JULIAN W., Ph.D. (University of Florida)
Assistant Professor (Extension Citriculturist), IFAS (1975-1975).

SAUNDERS, SCOTT G., B.S. (Johns Hopkins University)
Interim Assistant Professor of Economics (1974-1974).

SAVITT, TODD L., Ph.D. (University of Virginia)
Assistant Professor of Community Health and Family Medicine (1976-1976).

SAW, JOHN GREENVILLE, Ph.D. (University of London)
Professor of Statistics (1965-1969).

SAXON, JOHN P., Ph.D. (University of Georgia)
Associate Professor of Rehabilitation Counseling (1971-1976).

SAXON, STEPHEN APPOLLOS, Ph.D. (Florida State University)
Associate Professor of Mathematics (1969-1975).

SCHAFER, SUZAN H., Ed.D. (University of Florida)
Acting Director, Department of Extended Services, Division of Continuing Education (1975-1976).

SCHAFFER, GERALD, B.S.B.A. (University of Tampa)
Assistant to the Vice President for Administrative Affairs (1964-1971).

SCHANK, STANLEY COX, Ph.D. (University of California)
Professor of Agronomy (1961-1973).

SCHAUB, JAMES HAMILTON, Ph.D. (Purdue University)
Professor of Civil Engineering and Chairperson of the Department (1969-1969).•

SCHAUBLE, PAUL G., Ph.D. (Michigan State University)
Counseling Psychologist, University Counseling Center, Professor of Psychology, Counselor Education and Behavioral Studies (1970-1975).

SCHEAFFER, RICHARD LEWIS, Ph.D. (Florida State University)
Chairperson and Professor of Statistics Department (1967-1977).

SCHEFFER, GEORGE, M.A.Arch. (University of Florida)
Associate Professor of Architecture (1969-1977).

SCHENCK, NORMAN CARL, Ph.D. (University of Illinois)
Professor (Plant Pathologist), IFAS (1956-1968).

SCHER, RICHARD KING, Ph.D. (Columbia University)
Associate Professor of Social Sciences and Political Science (1972-1977).

SCHIEBLER, GEROLD LUDWIG, M.D. (Harvard Medical School)
Professor and Chairperson, Department of Pediatrics (1960-1968).

SCHILLING, LYNNE S., Ph.D. (Syracuse University)
Assistant Professor, College of Nursing (1975-1975).

SCHIMPFF, ROBERT D., M.D. (University of Florida)
Associate Professor of Basic Dental Sciences College of Dentistry and Associate Professor of Pathology and Chief of Neuropathology College of Medicine (1972-1977).

SCHLENKER, B. R., Ph.D. (State University of New York at Albany)
Associate Professor of Psychology (1972-1976).

SCHLENKER, PATRICIA, M.S. (SUNY-Albany)
Assistant in Education (1975-1975).

SCHMELING, GARETH L., Ph.D. (University of Wisconsin)
Professor and Chairman of Classics (1970-1975).

SCHMERTMANN, JOHN HENRY, Ph.D. (Northwestern University)
Professor of Civil Engineering (1956-1965).

SCHMID, GERHARD MARTIN, Ph.D. (Innsbruck University)
Associate Professor of Chemistry and Assistant Chairperson of Department of Chemistry (1964-1974).

SCHMID, REX E., Ed.D. (University of Virginia)
Assistant Professor of Special Education (1976-1976).

SCHMIDT, PATRICIA L., Ph.D. (Pennsylvania State University)
Assistant Dean of University College, Associate Professor of Behavioral Studies and Speech (1973-1977).

SCHMIDT, ROBERT ALLEN, Ph.D. (Pennsylvania State University)
Associate Professor (Forest Pathologist), IFAS (1967-1973).

SCHMIDT, RONALD H., Ph.D. (University of Minnesota)
Assistant Professor of Food Science, IFAS (1974-1974).

SCHNEIDER, GARY
Wrestling Coach (1974).

SCHNEIDER, NATHAN J., Ph.D. (University of Pittsburgh)
Assistant Professor of Microbiology and Cell Science, IFAS (1954-1954).

SCHNEIDER, RICHARD HAROLD, Ph.D. (University of Florida)
Publications Editor and Assistant in Urban Studies, Urban and Regional Planning Program (1973-1974).

SCHNEIDER, RICHARD THEODOR, Dr. RER Nat. (Technical University Stuttgart, Germany)
Professor of Nuclear Engineering Sciences (1965-1968).•

SCHOENAU, RONALD HELMUTH, B.S. (University of Florida)
Director, NERDC (1962-1973).

SCHOESSOW, GLEN JOHN, M.S.M.E.
Professor of Nuclear Engineering Sciences (1958-1958).

SCHOLES, ROBERT JAMES, Ph.D. (University of Indiana)
Professor of Speech and Linguistics (1966-1976).•

SCHOULTZ, LARS G., Ph.D. (University of North Carolina)
Associate Professor of Political Science (1977-1977).

SCHRODER, VINCENT NILS, Ph.D. (Duke University)
Associate Professor of Agronomy, IFAS (1955-1969).

SCHULKIND, MARTIN LEWIS, M.D. (University of Chicago)
Associate Professor of Pediatrics and Community Health and Family Medicine (1965-1972).

SCHULMAN, IVAN A., Ph.D. (University of California L.A.)
Graduate Research Professor of Latin American Literature and Director of the Center for Latin American Studies (1973-1977).

SCHULMAN, STEPHEN GREGORY, Ph.D. (University of Arizona)
Professor of Pharmaceutical Chemistry (1970-1974).

SCHUNCKE, GEORGE M., Ph.D. (Stanford University)
Assistant Professor of Education (1974-1974).

SCHURER, ERNST I., Ph.D. (Yale University)
Chairperson & Professor of German (1973-1977).•

SCHUSTER, DAVID JAMES, Ph.D. (Oklahoma State University)
Assistant Professor (Assistant Entomologist), IFAS, Agricultural Research and Education Center, Bradenton (1975-1975).

SCHWARTZ, J. MICHAEL, Ph.D. (Cornell University)
Assistant Professor of Behavioral Studies and Sociology (1973-1973).

SCHWARTZ, STUART ELLIS, Ed.D. (University of Kansas)
Assistant Professor of Education (1974-1974).

SCHWASSMANN, HORST O., Ph.D. (University of Wisconsin)
Associate Professor of Zoology (1972-1972).

SCHWEIDER, THEODORE L., B.A. (University of Miami)
Captain, U.S. Army, Assistant Professor of Military Science (1977-1977).

SCIADINI, FRANK, M.A.
Assistant Professor of Behavioral Studies, Adviser; Director of University College Honors Program (1960-1965).

SCORNIK, JUAN C., M.D. (University of La Plata)
Assistant Professor of Pathology (1976-1976).

SCOTT, BERNICE S., Ed.D. (Columbia University)
Program Director and Assistant Professor of Allied Health Program (1972-1972).

SCOTT, JERRIE C., Ph.D. (University of Michigan)
Assistant Professor of English (1977-1977).

SCOTT, KATHERINE NASFAY, Ph.D. (University of Florida)
Associate Professor of Radiology, VAH (1968-1977).

SCOTT, LUCI E., M.A.
Assistant Professor of Journalism and Communications (1976-1977).

SCOTT, MARY WILLINGHAM, M.S. (North Carolina State, Raleigh)
Visiting Instructor of Mathematics (1977-1977).

SCOTT, RICHARD R., Ph.D. (Harvard)
Assistant Professor of Psychology (1976-1976).

SCOTT, ROBERT TAYLOR, Ph.D. (Duke University)
Assistant Professor of Religion (1971-1971).

SCOTT, THOMAS A., Ph.D. (Harvard University)
Professor of Physics and Astronomy (1958-1971).

SCOTT, THOMAS McDONALD, M.A.E.
Associate Professor of Physical Education (1949-1977).

SCROGGIE, EVERETT, JR., M.A.
Assistant Professor of Communicative Disorders (1966-1968).

SCRUGGS, WILLIAM MARTIN, JR., M.Ed. (University of Florida)
Coordinator, Department of Extended Services, Division of Continuing Education (1968-1968).

SCUDDER, WALTER TREDWELL, Ph.D. (Cornell University)
Professor (Horticulturist) IFAS, Agricultural Research and Educational Center, Sanford (1955-1968).

SCULLY, GERRIE L., M.S.N. (University of California)
Instructor, College of Nursing (1977-1977).

SEAMAN, WILLIAM Ph.D. (University of Florida)
Assistant Professor of Forestry, Assistant Director of Sus Sea Grant College (1971-1972).

SEAWRIGHT, JACK A., Ph.D. (University of Florida)
Associate Professor of Entomology USDA, IFAS (1970-1970).

SEIDERS, REGINALD W., Ed.D.
Assistant Professor (Extension Program Specialist) and Acting Director, Environmental Programs, IFAS (1974-1974).

SEILER, GARY D., Ed.D. (University of Massachusetts)
Assistant Professor of Education (1974-1975).

SELBY, JOHN H., JR., M.D. (University of Texas Southwestern)
Assistant Professor of Surgery, VAH (1977-1977).

SELF, MORRIS WALDT, Ph.D. (University of Minnesota)
Professor of Civil Engineering (1966-1966).

SELFRIDGE, RALPH G., Ph.D. (University of Oregon)
Professor of Computer and Information Sciences, College of Engineering (1961-1965).

SELMAN, KELLY E., Ph.D. (Harvard University)
Assistant Professor of Anatomy (1974-1976).

SENTERFITT, VERNON, Ph.D.
Director, Teaching Laboratory Resources, J. Hillis Miller Health Center (1968-1974).

SEVER, JOSEPH C., Ph.D. (University of Iowa)
Assistant Professor of Speech (1976-1976).

SEVERY, LAWRENCE J., Ph.D. (University of Colorado)
Associate Professor of Psychology (1971-1975).

SEYMOUR, CARTER PURNELL, M.S.
Professor (Associate Plant Pathologist) Div. of Plant Industry, IFAS (1968-1970).

SHAAK, GRAIG D., Ph.D. (University of Pittsburgh)
Assistant Curator of Invertebrate Paleontology Florida State Museum, Joint Assistant Professor of Zoology, Geology, and Latin American Studies (1972-1972).

SHAARA, RICHARD BENSON, M.D. (University of Texas)
Director, Student Health Service (1969-1974).

SHAFFER, CHARLES VERNON, Ph.D. (Stanford University)
Professor of Electrical Engineering (1946-1966).

SHAH, DINESH O., Ph.D. (Columbia University)
Professor of Anesthesiology and Chemical Engineering (1970-1975).

SHANDS, JOSEPH W. JR., M.D. (Duke University)
Professor of Medicine, Chief, Division of Infectious Diseases; Professor of Medical Microbiology and Immunology (1961-1970).

SHANOR, LELAND, Ph.D. (University of North Carolina) D.Sc. (Illinois Wesleyan University)
Professor of Botany (1965-1965).

SHARP, BERT LAVON, Ed.D. (University of Florida)
Dean, College of Education and Professor of Education (1956-1958).

SHARP, DANIEL COMPTON, III, Ph.D. (Univ. of Massachusetts)
Assistant Professor (Assistant Physiologist), IFAS (1973-1973).

SHARP, JENNIFER, Ph.D. (University of Hawaii)
Assistant Professor of Entomology, IFAS (1972-1972).

SHAW, HARRY, Ph.D. (University of Illinois)
Associate Dean of University College & Associate Professor of English (1973-1977).

SHAW, LAWRENCE NEIL, Ph.D. (Ohio State)
Associate Professor (Associate Agricultural Engineer), IFAS, (1969-1974).

SHAW, LELAND G., M.Arch. (University of California)
Professor of Architecture (1964-1976).

SHAW, MARVIN EVERT, Ph.D. (University of Wisconsin)
Professor of Psychology (1959-1962).

SHEA, JOSEPH J., Ph.D. (University of Michigan)
Associate Professor in Education (1967-1971).

SHEEHAN, MARION RUFF, M.S. (Cornell University)
Assistant Professor in Ornamental Horticulture, IFAS (1972-1972).

SHEEHAN, THOMAS JOHN, Ph.D. (Cornell University)
Professor (Ornamental Horticulturist), IFAS (1954-1967).

SHELTON, DAVID LESLIE, Ph.D. (University of Missouri)
Assistant Professor of Theatre (1974-1974).

SHEMDIN, OMAR H., Ph.D. (Stanford University)
Professor of Coastal and Oceanographic Engineering, Professor of Engineering Sciences (1967-1974).

SHENKMAN, FREDERICK ALAN, Ed.D. (University of Florida)
Assistant Professor of Social Sciences and Education (1969-1971).

SHEPPARD, DONALD MAX, Ph.D. (Arizona State University)
Associate Professor of Coastal and Oceanographic Engineering (1968-1976).

SHERMAN, ROBERT R., Ed.D. (Rutgers University)
Professor and Chairperson of Education Foundations (1967-1977).

SHERMAN, WAYNE BUSH, Ph.D. (Purdue University)
Associate Professor of Fruit Crops (Associate Horticulturist), IFAS (1966-1972).

SHIELDS, DOROTHY ANN, M.Ed.
Associate Professor of Physical Education (1962-1975).

SHIELDS, ROBERT P., D.V.M., Ph.D. (Auburn University)
Associate Professor of Comparative Medicine (1973-1973).

SHIH, SUN-FU, Ph.D. (North Carolina State University)
Associate Professor (Associate Agricultural Engineer), IFAS, Agricultural Research and Education Center, Belle Glade (1976-1976).

SHIREMAN, JEROME VERN, Ph.D. (Iowa State University)
Associate Professor (Fisheries Science), IFAS (1973-1977).

SHIRLEY, RAY LOUIS, Ph.D. (Michigan State)
Professor of Animal Science (Animal Nutritionist) IFAS (1949-1953).

SHORT, DONALD EUGENE, Ph.D. (University of Nebraska)
Associate Professor (Associate Entomologist), IFAS (1970-1975).

SHORTRIDGE, KAREN ANN, M.Ed.
Residence Life Coordinator, Student Housing (1974-1974).

SHOWALTER, ROBERT KENNETH, M.S. (Purdue University)
Professor (Horticulturist), IFAS (1945-1956).

SHREVE, WILLIAM B., D.D.S. (Case Western Reserve University), M.A. (Roosevelt University)
Assistant Dean for Advanced Education and Associate Professor of Basic Dental Sciences, College of Dentistry (1975-1975).

SHULMAN, STANFORD T., M.D. (University of Chicago)
Associate Professor of Pediatrics (1973-1975).

SHUMAKER, JAMES R., Ph.D. (University of Minnesota)
Associate Professor (Associate Horticulturist), IFAS, Agricultural Research Center, Hastings (1967-1973).

SHUSTER, JONATHAN J., Ph.D. (McGill University)
Associate Professor of Statistics (1969-1974).

SIDERS, MARY B., M.A. (Ball State Univ.)
Teacher, P. K. Yonge (1975-1975).

SIDERS, RONALD ALLEN, Ph.D. (University of Oregon)
Assistant Professor of Professional Physical Education (1974-1974).

SIEG, KAY W., M.Ed. (University of Florida)
Associate Professor of Occupational Therapy (1971-1977).

SIERAKOWSKI, ROBERT L., Dr.Eng. (Yale University)
Professor of Engineering Sciences (1967-1973).

SIGMON, KERMIT N., Ph.D. (University of Florida)
Assistant Professor of Mathematics (1966-1966).

SILHACEK, DONALD L., Ph.D. (University of Wisconsin)
Associate Professor of Entomology USDA, IFAS (1970-1970).

SILVERMAN, DAVID N., Ph.D. (Columbia University)
Associate Professor of Pharmacology and Therapeutics (1971-1976).

SIMMONS, JOHN K., Ph.D. (Ohio State University), C.P.A. (Kansas)
Professor of Accounting and Director of School of Accounting (1974-1974).

SIMMONS, WILLIE J., M.S.
Director, Institute of Black Culture (1975-1975).

SIMON, THOMAS W., Ph.D. (Washington University)
Assistant Professor of Philosophy (1973-1973).

SIMONE, GARY W., Ph.D. (University of Illinois)
Assistant Professor of Plant Pathology, IFAS (1977-1977).

SIMPKINS, JAMES WILLIAM, Ph.D. (Michigan State University)
Assistant Professor of Pharmacy (1977-1977).

SIMPSON, CHARLES FLOYD, D.V.M. (Cornell University)
Assistant Dean for Research and Professor (Pathologist), College of Veterinary Medicine, IFAS (1948-1973).

SIMPSON, JAMES R., Ph.D. (Texas A & M University)
Associate Professor (Livestock Marketing), Food & Resource Economics, IFAS (1977-1977).

SIMPSON, JOHN M., D.D.S. (Washington University)
Assistant Professor of Periodontics, College of Dentistry (1977-1977).

SIMS, GEORGE RUDD, M.B.A.
College Placement Officer and Coordinator of Cooperative Programs, College of Business Administration (1957-1974).

SINGLETON, GEORGE T., M.D. (Baylor University)
Professor of Surgery and Chief of Otolaryngology, VAH (1961-1977).

SINGLEY, J. EDWARD, Ph.D. (University of Florida)
Professor of Environmental Engineering Sciences and Affiliate Professor of Chemistry (1967-1970).

SISLER, HARRY HALL, Ph.D. (University of Illinois)
Dean of the Graduate School, Director of Sponsored Research and Professor of Chemistry (1956-1973).

SIVAZLIAN, BOGHOS D., Ph.D. (Case Institute of Technology)
Professor of Industrial and Systems Engineering (1966-1972).

SKEEN, ELOIS A., Ph.D. (University of Michigan)
Assistant Professor, Office of Instructional Resources (1977-1977).

SKELLEY, ROBERT CHARLES, M.F.A.
Associate Professor of Art (1962-1970).

SKINNER, THOMAS COBB, M.Ag. (University of Florida)
Professor (Agricultural Engineer), IFAS (1947-1964).

SKOVHOLT, THOMAS M., Ph.D. (University of Missouri)
Assistant Professor of Behavioral Studies and Psychology (1973-1973).

SLAGLE, JOHN, Ph.D. (University of Washington)
Assistant Professor of Mathematics (1973-1973).

SLAYMAKER, CAROLYN J., M.A. (New York University)
*Associate Professor of Occupational Therapy (1966-1977).**

SLEDJESKI, STEPHEN S., Ed.S. (University of Florida)
Assistant Professor, P. K. Yonge (1975-1975).

SLOAN, DONALD R., B.S.
Systems Coordinator, Planning and Budgeting Section, Office of Vice President for Health Affairs (1976-1976).

SMAJSTRLA, ALLEN GEORGE, Ph.D. (Texas A & M University)
Assistant Professor (Assistant Agricultural Engineer), IFAS (1977-1977).

SMALL, PARKER ADAMS, JR., M.D. (University of Cincinnati)
Professor of Immunology and Medical Microbiology (1966-1966)

SMALL, TERENCE SAMUEL, M.A. Mus. Ed.
Professor of Music (1964-1975).

SMART, GROVER C., JR., Ph.D. (University of Wisconsin)
Professor (Nematologist), IFAS (1964-1973).

SMEDRESMAN, PAULETTE, M.D. (University of Louvain, Belgium)
Instructor of Pediatrics (1977-1977).

SMERAGE, GLEN HUNTINGTON, Ph.D. (Stanford University)
Associate Professor (Associate Engineer), IFAS (1976-1976).

SMIDT, ROBERT K., Ph.D. (University of Wyoming)
Assistant Professor of Statistics (1976-1976).

SMITH, ALBERT B., Ph.D. (University of North Carolina)
Professor of Romance Languages (1963-1970).

SMITH, ALBERT BARNES, III, Ph.D. (University of Michigan)
Associate Professor of Education (1970-1977).

SMITH, ALEXANDER GOUDY, Ph.D. (Duke University)
Professor of Physics and Astronomy (1948-1956).

SMITH, CECIL NUCKOLS, Ph.D. (University of California)
*Professor, Food and Resource Economics Department, IFAS (1952-1963).**

SMITH, DAVID THORNTON, J.D. (Boston University)
Professor of Law (1968-1969).

SMITH, DOUGLAS LEE, Ph.D. (Minnesota)
Associate Professor of Geology (1972-1976).

SMITH, EMMETT DAN, Ph.D. (Ohio State University)
Associate Professor of Accounting (1970-1976).

SMITH, ERNEST B., M.S. (Mississippi State University)
Agricultural Economist (Instructor of Agricultural Economics), USDA, IFAS (1974-1974).

SMITH, HALBERT C., D.B.A. (University of Illinois)
Professor of Real Estate and Urban Analysis (1971-1971).

SMITH, HERRICK HAYNER, M.S., M.L.A. (University of Georgia)
Program Director and Professor of Landscape Architecture (1966-1971).

SMITH, JACK REGINALD, Ph.D. (University of Southern California)
Professor of Electrical Engineering and Psychiatry (1964-1970).

SMITH, JO ANNE, M.A.
*Professor of Journalism and Communications (1959-1976).**

SMITH, JULIAN, M.A. (Tulane University)
Associate Professor of English (1977-1977).

SMITH, KENNETH L., Ph.D. (University of Missouri)
Associate Professor (Microbiologist), and Associate Professor, Microbiology and Cell Science, IFAS (1960-1966).

SMITH, LAWRENCE L., Ph.D. (University of Illinois)
Assistant Professor (1974-1974).

SMITH, PAUL H., Ph.D. (University of California)
Chairperson and Professor, Microbiology and Cell Science, IFAS (1959-1969).

SMITH, QUENTIN M., D.D.S. (University of Tennessee),
Professor of Community Dentistry, College of Dentistry (1969-1969).

SMITH, REX LANEL, Ph.D. (Iowa State University)
Associate Professor (Associate Agronomist), IFAS (1968-1973).

SMITH, RICHARD CLARK, Ph.D. (Duke University)
Professor of Botany, Arts and Sciences (1964-1977).

SMITH, RICHARD T., M.D. (Tulane University)
Professor and Chairperson of Pathology and Director of the C. V. Whitney Marineland Laboratory (1958-1967).

SMITH, ROBERTS COLES, JR., B.A. (University of Florida)
Assistant Professor (Assistant Editor), IFAS (1961-1961).

SMITH, STANLEY K., Ph.D. (University of Michigan)
Assistant Professor of Economics; Assistant Professor, Bureau of Economic and Business Research (1976-1976).

SMITH, W. MARTIN, JR., B.A. (Marshall University)
Professional Insurance Coordinator, J. Hillis Miller Health Center Insurance Trust Fund (1975-1975).

SMITH, WAYNE H., Ph.D. (Mississippi State University)
Professor and Assistant (Forest Nutritionist), IFAS (1964-1976).

SMITH, WILLIAM HOWARD, P.Ed.
Associate Professor, Extension District Agent, IFAS (1958-1971).

SMITHERMAN, JOHN A., M.S. (Texas A & M University)
Colonel, U.S. Air Force, Professor of Aerospace Studies (1976-1976).

SMITTLE, BURRELL JOE, Ph.D. (Rutgers University)
Professor of Entomology and Medical Entomologist, USDA Entomology Research Laboratory (1965-1965).

SMUTZ, MORTON, Ph.D. (University of Wisconsin)
Professor of Chemical Engineering; Associate Dean for Research, College of Engineering; Associate Director, Engineering and Industrial Experiment Station; Chairperson, Coastal and Oceanographic Engineering Dept. (1969-1969).

SNIDER, M. JOSEPHINE, Ed.D. (University of Florida)
*Coordinator, R.N. Program and Assistant Professor, College of Nursing (1965-1976).**

SNODGRASS, CHRIS G., Ph.D. (State University of New York at Buffalo)
Assistant Professor of English (1973-1974).

SNOWBALL, DOUGLAS A. T., Ph.D. (University of Washington)
Assistant Professor of Accounting (1975-1975).

SNYDER, DAVID M., M.B.A. (Cornell University)
Assistant Hospital Director, Support Services, Shands Teaching Hospital & Clinics (1977-1977).

SNYDER, GEORGE H., Ph.D. (Ohio State University)
Associate Professor (Associate Soils Chemist), IFAS, Agricultural Research and Education Center, Belle Glade (1967-1973).

SOAR, ROBERT STEPHEN, Ph.D. (University of Minnesota)
Professor of Education (1966-1966).

SOARES, GLAUCIO ARY DILLON, Ph.D. (Wash. Univ., St. Louis)
Professor of Sociology and Latin American Studies (1974-1975).

SOFTLEY, DONALD A., M.A. (University of Michigan)
Interim Assistant Professor of History (1977-1977).

SOLIS, MANUEL MAVRICIO, M.S. (University of Florida)
Assistant Professor of Pediatrics (JHEP) (1971-1974).

SOLIS, MANUEL MAVRICIO, M.S.
Associate Professor of Architecture (1969-1975).

SOMMERVILLE, C. JOHN, Ph.D. (University of Iowa)
Associate Professor of History (1971-1977).

SONODA, RONALD MASAHIRO, Ph.D. (University of California)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research Center, Ft. Pierce (1969-1974).

SORENSON, HERBERT W., D.D.S. (University of Toronto)
Associate Professor of Pediatric Dentistry, College of Dentistry (1975-1975).

SOULE, JAMES, Ph.D. (Univeristy of Florida)
Professor and Assistant Chairman of Fruit Crops (Horticulturist), IFAS (1956-1967).

SOWER, LONNIE LEE, Ph.D. (University of California)
Assistant Professor (Assistant Entomologist), USDA, IFAS (1975-1975).

SPANGLER, BYRON DEMENT, M.S.E. (University of Florida)
Professor of Civil Engineering (1949-1971).

SPANGLER, DANIEL PATRICK, Ph.D. (University of Arizona)
Associate Professor of Geology (1973-1976).

SPANIER, JOHN WINSTON, Ph.D. (Yale University)
*Professor of Political Science (1957-1967).**

SPANIER, SUZANNE O., M.D. (University of Florida)
Assistant Professor of Orthopaedic Surgery (1975-1975).

SPARKS, LINDA FRANCES, M.S. in L.S.
Associate Librarian, Education Library (1961-1970).

SPELLACY, WILLIAM N., M.D. (University of Minnesota)
Professor and Chairperson, Obstetrics and Gynecology (1973-1973).

SPENCER, CRISPIN P., D.V.M. (University of Georgia)
Assistant Professor, College of Veterinary Medicine (1977-1977).

SPINKS, DANIEL O., Ph.D. (North Carolina State University)
Professor and Associate Dean for Resident Instruction, IFAS (1947-1969).

SPREEN, THOMAS H., Ph.D. (Purdue University)
Assistant Professor, Food & Resource Economics, IFAS (1977-1977).

SPRING, ANITA, Ph.D. (Cornell University)
Assistant Professor of Behavioral Studies and Anthropology (1973-1975).

SPRINGER, PHILIP K., M.D. (University of Mississippi)
Assistant Professor of Psychiatry (1977-1977).

SPURLOCK, CARL W., Ph.D. (University of Oklahoma)
Assistant Professor of Geography (1972-1972).

SQUILLACE, ANTHONY E., Ph.D. (University of Florida)
Professor, (Forestry Experiment Station, Olustee) USDA, IFAS (1965-1965).

SRYGLEY, TED FILO, M.S.
Director, J. Hillis Miller Health Center Library (1966-1966).

ST. JACQUES, ERNEST HOWARD, Ph.D. (George Peabody College)
Dean of Academic Affairs for Matriculation Services and Associate Professor of Social Sciences (1969-1973).

STAHMER, HAROLD M., Ph.D. (Cambridge University)
Associate Dean of the College of Arts and Sciences and Professor of Religion and Philosophy (1969-1969).

STAINSBY, WENDELL N., Sc.D. (Johns Hopkins University)
Professor of Physiology (1957-1969).

STALL, ROBERT EUGENE, Ph.D. (Ohio State University)
Professor of Plant Pathology, IFAS (1957-1969).

STALNAKER, THOMAS G., B.A. (University of Florida)
Professional Insurance Coordinator, J. Hillis Miller Health Center Insurance Trust Fund (1976-1976).

STANDLEY, GERALD BRENT, Ph.D. (University of Buffalo)
Professor of Behavioral Studies (1960-1968).

STANLEY, HAROLD R., D.D.S. (University of Maryland)
Professor and Chairman of Oral Medicine, College of Dentistry and Professor of Pathology (1968-1974).

STANLEY, ROBERT LEE, JR., Ph.D. (University of Georgia)
Associate Professor (Associate Agronomist), IFAS, Agricultural Research and Education Center, Quincy (1968-1975).

STARNES, EARL MAXWELL, Ph.D. (Florida State University)
Program Director and Professor of Urban and Regional Planning (1976-1976).

STASHAK, TED S., D.V.M. (University of California at Davis) M.S. (Colorado State University)
Assistant Professor, College of Veterinary Medicine (1976-1976).

STECHMILLER, JOYCE A., M.S.N. (University of Maryland)
Assistant Professor, College of Nursing (1977-1977).

STEELE, KATHERINE L., Ed.D. (University of Florida)
Associate Director, Office of Instructional Resources (1974-1974).

STEIN, GARY S., Ph.D. (University of Vermont)
Associate Professor of Biochemistry and Molecular Biology (1972-1975).

STEIN, GERALD H., M.D. (University of Pennsylvania)
Assistant Professor of Medicine (VAH) and Community Health and Family Medicine (1969-1972).

STEIN, JANET L., Ph.D. (Princeton University)
Assistant Professor of Immunology, Medical Microbiology, Biochemistry, and Molecular Biology (1976-1976).

STEPHENS, FOY WOODROW, M.PhH.
Associate Professor of Physical Education (1952-1976).

STEPHENS, JAMES MORRIS, M.S.A. (University of Florida)
Associate Professor (Extension Vegetable Specialist), IFAS (1962-1974).

STERRETT, DELBERT ELLINGSWORTH, Ed.D (George Peabody College)
Associate Professor of Music (1948-1970).

STEVENS, ANN REBECCA, Ph.D. (University of Colorado)
Associate Professor of Biochemistry, VAH (1968-1974).

STEWARD, KERRY KALEN, Ph.D. (University of Connecticut)
Assistant Professor (Assistant Plant Physiologist), IFAS, USDA, Agricultural Research Center, Ft. Lauderdale (1967-1976).

STEWART, B., M.A.
Counsellor Coordinator, DSSSP.

STEWART, ERNEST HAROLD, M.S. (Auburn University)
Associate Professor (Associate Soils Physicist), IFAS, USDA, Agricultural Research Center, Ft. Pierce (1960-1960).

STEWART, FRED J., Ph.D. (University of Kentucky)
Assistant Professor (Agricultural Economist)

STEWART, IVAN, Ph.D. (Rutgers University)
Professor (Biochemist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1951-1961).

STEWART, RONALD BROR, M.S.P.
Associate Professor of Clinical Pharmacy and Associate Chairman of Pharmacy (1963-1975).

STITT, STEPHEN D., J.D. (University of Michigan)
Assistant Professor of Law (1972-1972).

STOECKEL, JAY EDWIN, M.Arch, (V.P.I.)
Assistant Professor of Architecture (1975-1975).

STOKES, DONALD EUGENE, Ph.D. (University of Florida)
Assistant Professor of Nematology, DPI, IFAS (1973-1973).

STONE, WILLIAM K., A.B. (Harvard College)
Associate Director of Development for Planned Giving (1973-1973).

STONE, WILLIARD E., Ph.D. (U. of Pennsylvania), C.P.A. (Pennsylvania)
Professor of Accounting (1960-1960).

STOUFER, ROBERT CARL, Ph.D. (Ohio State University)
Associate Professor of Chemistry (1958-1967).

STOUT, FRANK W., D.D.S. (University of Detroit)
Associate Professor of Oral Medicine, College of Dentistry (1972-1972).

STRAIN, J. ROBERT, Ph.D. (Oregon State University)
Professor (Extension Economist) Food and Resource Economics Department, IFAS (1976-1976).

STRANDBERG, JAMES OLIVER, Ph.D. (University of Wisconsin)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research and Education Center, Sanford (1967-1973).

STRAUGHN, ALTO ALFRED, Ph.D. (University of Wisconsin)
Associate Professor (Director, Program Evaluation and Organizational Development), IFAS (1965-1973).

STRAUS, BARRIE RUTH, Ph.D. (University of Iowa)
Assistant Professor of English (1973-1974).

STRAYER, JOHN R., Ph.D. (Clemson University)
Professor, IFAS (1965-1975).

STREET, JIMMY JOE, Ph.D. (Colorado State University)
Assistant Professor of Soil Science (Soil Extension), IFAS (1976-1976).

STREETMAN, EVON, B.A.
Associate Professor of Art (1977-1977).

STREIB, GORDON F., Ph.D. (Columbia University)
Graduate Research Professor of Sociology (1975-1975).

STREIFF, RICHARD R., M.D. (University of Basel)
Professor of Medicine and Chief of Medical Services, VAH (1967-1974).

STRICKLAND, ALBERT CARSON, M.S. (Florida State University)
Librarian, IFAS (1958-1973).

STRINGFELLOW, HART R., M.Ed., Ph.D. (University of Florida)
Assistant Professor of Oral Medicine and Dental Education, College of Dentistry (1975-1975).

STRIPLING, ROBERT OLIN, Ed.D. (Columbia University)
Distinguished Service Professor, Counselor Education (1941-1974).

STROZIER, VIRGINIA RAGLAND, M.A. (University of Chicago)
Associate Professor, College of Nursing (1957-1976).•

STURGILL, CLAUDE C., Ph.D. (University of Kentucky)
Professor of History (1969-1977).

SU, SIEW PHEK, M.S. (University of Wisconsin)
Assistant Librarian, IFAS (1970-1970)•

SU, STANLEY YUEH-WEI, Ph.D. (University of Wisconsin)
Associate Professor of Computer and Information Sciences, Electrical Engineering and Speech (1970-1974).

SUAREZ, ANDRES, D.C.L. (University of Havana)
Professor of Latin American Studies, History, and Political Science (1965-1965).

SUCHMAN, DAVID I., Ph.D. (Ohio State University)
Counseling Psychologist, University Counseling Center; Associate Professor of Psychology (1967-1967).

SUGARMAN, BETTY, A.C.S.W. (Columbia University)
Instructor of Social Work in Psychiatry (1973-1973).

SULLIVAN, EDWARD THOMAS, D.F. (Duke University)
Associate Professor (Forest Economist), IFAS (1959-1959).

SULLIVAN, EILEEN, Ph.D. (University of Florida)
Assistant Professor of Behavioral Studies (1969-1970).

SULLIVAN, ROBERT LEE, Ph.D. (University of Florida)
Associate Professor of Electrical Engineering (1970-1975).

SULLIVAN, WILLIAM J., Ph.D. (Yale University)
Associate Professor of Russian and Linguistics (1970-1975).

SULLWOLD, ARTHUR F., M.D. (Louisiana State University)
Assistant Professor of Psychiatry, VAH (1976-1977).

SUMMERS, THOMAS EUGENE, Ph.D. (University of Iowa)
Professor (Entomologist), IFAS, USDA (1966-1973).

SUMNER, HAROLD RALPH, M.S. (University of Kentucky)
Adjunct Assistant Professor (Assistant Agricultural Engineer) IFAS, USDA, AREC-Lake Alfred (1968-1970).

SUNWALL, JAMES RAYMOND, Ph.D. (University of Iowa)
Professor of Humanities (1957-1971).

SURAK, JOHN GODFREY, Ph.D. (University of Wisconsin)
Assistant Professor (Assistant Food Toxicologist), IFAS (1974-1974).

SUSSMAN, LEWIS A., Ph.D. (University of North Carolina)
Associate Professor of Classics (1976-1976).

SUTHERLAND, ALAN DURYEA, Ph.D. (University of Illinois)
Professor of Electrical Engineering (1958-1965).•

SUTHERLAND, ROBERT ALLEN, Ph.D. (University of Missouri)
Assistant Research Scientist (Radiation Physicist), IFAS (1974-1974).

SUTTER, ANN B., M.S.W. (University of Oklahoma)
Instructor of Social Work in Psychiatry (1977-1977).

SUTTON, DAVID LEE, Ph.D. (Virginia Polytechnic Institute)
Associate Professor (Associate Agronomist) Agricultural Research Center, Ft. Lauderdale (1970-1975).

SUZUKI, HOWARD K., Ph.D. (Tulane University)
Dean and Professor of College of Health Related Professions (1970-1972).

SWAIN, RALPH, Ph.D. (Cornell University)
Associate Professor of Industrial & Systems Engineering, and Associate Director, Health Systems Research Center (1976-1976).

SWANSON, BERT E., Ph.D. (University of Oregon)
Professor of Political Science (1971-1971).

SWANSON, RICHARD M., Ph.D. (University of Colorado)
Associate Professor of Psychology (1972-1975).

SWINDEL, BENNE F., Ph.D. (North Carolina State University)
Adjunct Associate Professor, (USDA Forest Service), IFAS (1976-1976).

SYPERT, GEORGE W., M.D. (University of Washington)
Associate Professor of Surgery and Neuroscience, and Chief of Neurological Surgery, VAH (1974-1977).

SYPERT, NANCY S., M.N. (University of Washington)
Instructor, College of Nursing (1975-1975).

TALBERT, JAMES L., M.D. (Vanderbilt University)
Professor of Surgery and Pediatrics and Chief of Pediatric Surgery (1967-1970).

TAPPAN, WILLIAM BURGESS, M.S.A. (University of Florida)
Professor (Entomologist), IFAS, Agricultural Research and Education Center, Quincy (1955-1974).

TARJAN, ARMAN CHARLES, Ph.D. (University of Maryland)
Professor (Nematologist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1955-1958).•

TARRANT, PAUL, Ph.D. (Duke University)
Professor of Chemistry (1946-1957).

TATE, ROBERT L. III, Ph.D. (University of Wisconsin)
Assistant Professor (Assistant Microbiologist), IFAS Agricultural Research and Education Center, Belle Glade, (1975-1977).

TATE, SUSAN DOUGLAS, M.S., M.Arch. (University of Florida)
Assistant Professor of Interior Design (1972-1976).

TAYLOR, CAROLE Y., J.D. (University of North Carolina)
Associate University Attorney (1977-1977).

TAYLOR, CAROLYN D., M.A. (London University)
Assistant Professor, College of Nursing (1959-1974).

TAYLOR, CLIFTON L., Ph.D. (University of Wisconsin)
Assistant Professor (Extension Program Specialist), IFAS (1975-1975).

TAYLOR, DEAN G., Ph.D. (University of Chicago)
Associate Professor of Finance (1971-1976).

TAYLOR, FRANK H.G.
Associate Professor of Humanities (1964-1968).

TAYLOR, GRACE W., J.D. (University of Florida)
Director of Law Libraries (1950-1962).

TAYLOR, WILLIAM JAPE, M.D. (Harvard University)
Distinguished Service Professor of Medicine (1958-1974).

TEAGUE, PERRY O., Ph.D. (University of Oklahoma)
Associate Professor of Pathology (1968-1973).

TEAS, DONALD CLAUDE, Ph.D. (University of Texas)
Professor of Speech and Psychology (1967-1971).

TEEM, DAVID H., Ph.D. (Auburn University)
Assistant Professor (Weed Specialist) (1976-1976).

TEFERTILLER, KENNETH RAY, Ph.D. (University of Illinois)
Professor (Economist) and Vice President for Agricultural Affairs, IFAS (1965-1973).

TEICHMAN, RONALD J., Ph.D. (Northwestern University)
Assistant Professor of Accounting (1971-1971).

TENNANT, LEO KEITH, Ed.S. (University of Florida)
Assistant Professor of Professional Physical Education (1967-1972).

TEPLY, MARK LAWRENCE, Ph.D. (University of Nebraska)
Associate Professor of Mathematics (1968-1973).

TERHUNE, FRANCES W., Ph.D. (University of Florida)
Assistant in Research, Bureau of Economic and Business Research (1976-1976).

TERHUNE, JAMES L., Ph.D. (Indiana University)
Associate Professor of Journalism and Communications and Chairman. Department of Advertising and Public Relations (1967-1976).•

TERRELL, TIMOTHY G., D.V.M. (Texas A&M University) Ph.D. (University of California at Davis)
Assistant Professor, College of Veterinary Medicine and Department of Pathology, College of Medicine (1976-1976).

TERRY, CLINTON W., M.A. (Univ. of California, Santa Barbara)
Interim Assistant Professor of Criminal Justice and Sociology (1977-1977).

TERRY, JUAN E., M.S.L.S.
Assistant Librarian, J. Hillis Miller Health Center Library (1968-1968).

TERRY, RICHARD E., Ph.D. (Purdue University)
Assistant Professor (Assistant Soil Biochemist), Agricultural Research and Education Center, Belle Glade (1977-1977).

TESAR, DELBERT, Ph.D. (Georgia Institute of Technology)
Professor of Mechanical Engineering; Professor of Engineering Sciences (1964-1969).

TEW, ROY EDWARDS, Ph.D. (Ohio State University)
Professor of Speech (1937-1966).•

THAR, TIMOTHY L., M.D. (Johns Hopkins University)
Assistant Professor of Radiation Therapy (1976-1976).

THATCHER, WILLIAM WATTERS, Ph.D. (Michigan State University)
Associate Professor (Animal Physiologist), IFAS (1969-1974).

THOMAS, BILLY SEAY, Ph.D. (Vanderbilt University)
Associate Professor of Physics (1960-1976).

THOMAS, CURLEW O., Ph.D. (Louisiana State University)
Assistant Professor of Afro-American Studies and Sociology (1974-1974).

THOMAS, DARRYL L., Ph.D. (University of California)
Assistant Professor (Assistant Pathologist), IFAS, Agricultural Research Center, Ft. Lauderdale (1972-1972).

THOMAS, JAMES M., M.D. (University of Florida)
Assistant Professor of Surgery (1977-1977).

THOMAS, MICHAEL E., Ph.D. (Johns Hopkins University)
Professor of Industrial and Systems Engineering and Chairperson of the Department (1965-1972).

THOMAS, ROBERT E., M.A. (University of Florida)
Assistant Professor, Editorial, IFAS (1974-1974).

THOMAS, VIRGINIA RUTH, A.M.L.S.
Associate Librarian and Chairperson of Computerized Cataloging (1974-1977).

THOMAS, WILLIAM CLARK, JR., M.D. (Cornell University)
Professor of Medicine and Associate Director for Research VAH (1957-1973).

THOMPSON, BUFORD DALE, Ph.D. (University of Florida)
Professor (Horticulturist), IFAS, (1948-1966).•

THOMPSON, FLOYD J., Ph.D. (Indiana University)
Assistant Professor of Neuroscience (1974-1974).

THOMPSON, FRED GILBERT, Ph.D. (University of Miami)
Associate Curator of Malacology, Florida State Museum, Joint Associate Professor of Zoology and Latin American Studies (1966-1973).

THOMPSON, IRENE, M.A. (New York University)
Associate Professor of English (1967-1975).

THOMPSON, JOHN B., III, M.P.H.
Assistant Coach (1966-1966).

THOMPSON, NEAL PHILIP, Ph.D. (Princeton University)
Professor (Biochemist), IFAS (1965-1977).

THOMPSON, RALPH BURNHAM, Ph.D. (University of Texas)
Professor of Marketing; Professor, Bureau of Economic and Business Research (1955-1960).•

THOMSON, ROBERT S., Ph.D. (Cambridge University)
Assistant Professor of English (1974-1974).

THOMPSON, ROGER M., Ph.D. (University of Texas)
Associate Professor of English and Linguistics (1971-1976).

THOMPSON, VICTOR A., Ph.D. (Columbia University)
Graduate Research Professor of Political Science (1971-1977).

THURSBY, GENE ROBERT, Ph.D. (Duke University)
Associate Professor of Religion (1970-1976).

TICER, JAMES W., D.V.M. (University of California at Davis)
Ph.D. (Colorado State University)
Professor, College of Vet Med and Dept of Radiology, College of Medicine; and Chief-of-Staff, Veterinary Medical Teaching Hospital (1976-1976).

TILLEY, DANIEL STEPHEN, Ph.D. (Iowa State University)
Assistant Professor (Assistant Marketing Economist), DC, IFAS (1974-1974).

TILLMAN, CHESTER EARL, Ed.D. (University of Florida)
Associate Professor of English and Education (1967-1976).

TILLMAN, WILEY JAMES, JR., M.Arch. (University of Illinois)
Associate Professor of Architecture (1952-1968).•

TIMMERMAN, MELVIN EUGENE, Ph.D. (University of South Carolina)
Assistant Professor of Education (1960-1960).

TING, SIK VUNG, Ph.D. (Ohio State University)
Adjunct Professor (Biochemist), IFAS, DC, AREC-Lake Alfred (1952-1968).

TISON, JEAN PIEPER, M.A.E. (University of Florida)
Assistant Professor in Education (1936-1976).

TJIA, BENNY O., Ph.D. (Ohio State University)
Assistant Professor (Extension Floriculture Specialist), IFAS (1975-1975).

TOBEY, FRANK L., Ph.D. (University of Michigan)
Assistant Professor of Ophthalmology (1974-1974).

TOBIAS, JOEL A., M.D. (University of Pennsylvania)
Associate Professor of Surgery, VAH (1972-1977).

TODA, YASUSHI, Ph.D. (Harvard University)
Assistant Professor of Economics (1974-1974).

TODD, EUGENE ALLEN, Ed.D. (University of Houston)
Professor of Education and Chairman, Department Subject Specialization Teacher Education (1966-1976).

TOLBERT, ELIAS LAKE, Ed.D. (Columbia University)
Associate Professor of Education (1967-1968).

TOROSIAN, GEORGE, Ph.D. (University of Wisconsin)
Associate Professor of Pharmacy (1969-1974).

TOSKES, PHILIP P., M.D. (University of Maryland)
Associate Professor of Medicine, VAH (1973-1975).

TOU, JULIUS T., Ph.D. (Yale University)
Director, Center for Information Research, and Graduate Research Professor of Computer and Information Sciences and Electrical Engineering (1967-1967).

TOWNSEND, KENNETH G., M.S. (University of Florida)
Associate in Entomology, IFAS (1973-1973).

TRACEY, VINCENT GREGORY, M.S. (Oklahoma State Univ.)
Associate Professor of Building Construction (1973-1973).

TRAMMELL, ALLEN R., B.S.
Assistant Coach (1972-1972).

TRAVIS, DAVID M., M.D. (Vanderbilt University)
Professor of Pharmacology and Therapeutics (1958-1974).

TRICKEY, SAMUEL BALDWIN, Ph.D. (Texas A&M University)
Associate Professor of Physics (1968-1973).

TRIMMER, J. MORRIS, M.B.A. (University of Florida)
Associate Professor of Building Construction (1958-1975).•

TROBE, JONATHAN D., M.D. (Harvard Medical School)
Assistant Professor and Chief of Ophthalmology, VAH (1974-1975).

TROUPIN, EDWARD CHARLES, M.M.
Professor of Music (1960-1968).

TRUEBLOOD, FELICITY, M.A.
Associate Research Scholar of Latin American Studies and History (1964-1976).

TSAI, JAMES HSI-CHO, Ph.D. (Michigan State University)
Assistant Professor (Assistant Entomologist), IFAS, Agricultural Research Center, Ft. Lauderdale (1973-1973).

TSIBRIS, JOHN C. M., Ph.D. (Cornell University)
Visiting Associate Professor of Obstetrics and Gynecology (1971-1977).

TUCKER, CAROLYN M., Ph.D. (SUNY at Stony Brook)
Assistant Professor of Behavioral Studies (1976-1977).

TUCKER, DAVID P., Ph.D. (Univ. of California, Riverside)
Associate Professor of Fruit Crops (Extension Horticulturist), IFAS, AREC-Lake Alfred (1966-1972).

TUCKER, WILLIAM B., M.D. (University of Chicago)
Professor of Medicine (1970-1970).

TUMLINSON, JAMES H. III, Ph.D. (Mississippi State University)
Associate Professor of Entomology USDA, IFAS (1970-1970).

TURNER, EDWARD C., Ph.D. (Michigan State University)
Assistant Professor of Education (1972-1974).

TURNER, ELDON R., Ph.D. (Kansas State University)
Assistant Professor of History (1969-1969).

TURNER, I. DOUGLAS, B.S.
Director of Student Financial Affairs (1965-1967).

TURNER, JOAN G., M.S.N. (University of Maryland)
Assistant Professor, College of Nursing (1976-1976).

TWITCHELL, JAMES B., Ph.D. (University of North Carolina)
Associate Professor of English (1973-1976).

TYLER, MAX E., Ph.D. (Ohio State University)
Professor, Microbiology and Cell Science, IFAS (1953-1953).

TYLER, WILLIAM GURDON, III, Ph.D. (Fletcher School of Law and Diplomacy, Tufts University)
Assistant Professor of Economics (1969-1969).•

TYNER, MACK, Ph.D. (University of Cincinnati)
Professor of Chemical Engineering (1944-1956).

TYSSELAND, MILFORD S., Ph.D. (University of Minnesota)
Associate Professor of Finance (1968-1968).•

UDELL, BUDD ALLEN, D.M.A. (Cincinnati)
Associate Professor of Music & Chairman of Department of Music (1977-1977).

UELSMANN, JERRY NORMAN, M.S., M.F.A.
Graduate Research Professor of Art (1960-1974).•

ULAM, STANISLAW MARCIN, Ph.D. (Polytechnic Institute in Lwow Poland)
Graduate Research Professor of Mathematics (1973-1973).

ULMER, GREGORY, Ph.D. (Brown University)
Associate Professor of Humanities (1972-1977).

UMAN, MARTIN ALLAN, Ph.D. (Princeton University)
Professor of Electrical Engineering and Physics (1972-1972).

UNDERBERGER, HOWARD LLOYD, M.S. (Polytechnic Institute of Brooklyn)
Associate Professor of Building Construction (1971-1976).

UPCHURCH, M. L., Ph.D. (University of Wisconsin)
Visiting Professor and Acting Director, Center for Rural Development, IFAS (1972-1972).

UPSHAW, WINTON LAMAR, B.S.B.A.
Associate in College of Health Related Professions (1962-1976).

UREY, BLANCHE I., Ed.D. (Columbia University)
Dean and Professor, College of Nursing (1973-1973).

URONE, PAUL, Ph.D. (Ohio State University)
Professor of Environmental Engineering Sciences and Affiliate Professor of Chemistry (1971-1971).

VALA, MARTIN T., Ph.D. (University of Chicago)
Associate Professor of Chemistry (1967-1972).

VALENSTEIN, EDWARD, M.D. (Albert Einstein College of Medicine)
Associate Professor and Chief of Neuromuscular Services (1974-1975).

VALISALO, PAAVO EMIL, D.Eng. (Technical University of Finland)
Associate Professor of Industrial and Systems Engineering (1961-1970).

VAN ALSTYNE, W. SCOTT, S.J.D. (University of Wisconsin)
Professor of Law (1972-1973).

VAN AUKEN, WENDELL G., Ed.S. (University of Florida)
*Assistant in Administration (1970-1971).**

VAN BLOKLAND, PETER JON, Ph.D. (University of Illinois)
Assistant Professor, Food and Resource Economics, IFAS (1976-1976).

VANCE, JOHN MILTON, Ph.D. (University of Texas)
Associate Professor of Mechanical Engineering (1969-1973).

VAN DE RIET, VERNON DWAYNE, Ph.D. (Florida State University)
Associate Professor of Clinical Psychology and Psychology (1962-1968).

VANDERWERF, CALVIN A., Ph.D. (Ohio State University)
Dean, College of Arts and Sciences and Professor of Chemistry (1971-1971).

VANDIVER, JOSEPH S., Ph.D. (Louisiana State University)
Professor of Sociology (1962-1962).

VANDIVER, VERNON V., Ph.D. (N. Carolina St. U.)
Assistant Professor (Extension Aquatic Weeds Specialist) IFAS, Agricultural Research Center, Ft. Lauderdale (1975-1975).

VAN HARTESVELDT, C. J., Ph.D. (University of Rochester)
Associate Professor of Psychology and Neuroscience, and Assistant Dean of the Graduate School (1970-1977).

VAN HORN, HAROLD H., (Iowa State University)
Professor (Animal Nutritionist) and Chairperson, Dairy Science Department, IFAS (1970-1970).

VAN MIEROP, L.H.S., M.D. (University of Leiden, Netherlands)
Graduate Research Professor (1966-1977).

VAN RINSVELT, HENRI ALBERT, Ph.D. (University of Utrecht)
Associate Professor of Physics (1967-1973).

VARMA, ARUN KUMAR, Ph.D. (University of Alberta)
Professor of Mathematics (1967-1975).

VARNELL, RAY J., Ph.D. (North Carolina State)
Assistant Research Scientist, IFAS (1974-1975).

VARNES, PAUL RAY, Ed.D. (University of Florida)
Professor of Professional Physical Education and Chairperson of the Department of Recreation (1968-1975).

VASIL, INDRA KUMAR, Ph.D. (University of Delhi, India)
Professor and Chairperson of Botany, Arts and Sciences (1967-1977).

VERA, MARIA INEZ, M.S.W. (University of Kansas)
Instructor of Social Work in Psychiatry (1974-1974).

VERA-GODOY, HERNAN, Ph.D. (University of Kansas)
Assistant Professor of Sociology (1974-1974).

VERINK, ELLIS DANIEL, JR., Ph.D. (Ohio State University)
Professor of Materials Science and Engineering and Chairperson of the Department (1965-1973).

VERNON, JACK R., Ph.D. (Northwestern University)
Professor of Economics (1967-1974).

VERTUCCI, FRANK J., D.M.D. (New Jersey Dental School)
Assistant Professor of Endodontics, College of Dentistry (1975-1975).

VICK, KENNETH W., Ph.D. (Oklahoma State University)
Associate Professor of Entomology (1970-1970).

VICKERS, FRANK D., Ph.D. (University of Florida)
Associate Professor of Computer and Information Sciences, College of Engineering (1959-1967).

VICTORICA, BENJAMIN E., M.D. (University of Cuyo, Argentina)
Associate Professor of Pediatrics (1967-1974).

VIERCK, CHARLES J. JR., Ph.D. (University of Florida)
Professor of Neuroscience and Psychology (1965-1977).

VILALLONGA, FEDERICO, Ph.D. (University of Buenos Aires)
Professor of Pharmacy (1969-1969).

VOGEL, JOSEPH F., Ph.D. (University of Florida)
Associate Professor of English (1965-1970).

VOGH, BETTY P., Ph.D. (University of Florida)
Associate Professor of Pharmacology and Therapeutics (1965-1974).

VOICHYSONK, BERNARD FRANCIS, M.F.A. (Yale)
Professor of Architecture (1959-1976).

VOITLE, ROBERT ALLEN, Ph.D. (University of Tennessee)
Associate Professor (Associate Physiologist), IFAS (1969-1974).

VOLIN, RAYMOND B., Ph.D. (Montana State College)
Associate Professor (Associate Plant Pathologist), IFAS Agricultural Research & Education Center, Homestead (1971-1971).

VOLK, BOB GARTH, Ph.D. (Michigan State University)
Associate Professor of Soil Science (Soil Chemistry), IFAS (1970-1974).

VON MERING, OTTO O., Ph.D. (Harvard University)
Professor of Anthropology and Community Health and Family Medicine (1970-1970).

VOYLES, LOUIS VERNON, B.A. (University of Florida)
University Registrar (1949-1974).

VRIES, JOHN K., M.D. (University of California)
Associate Professor, Neurological Surgery and Pediatrics (1975-1975).

WACKERLY, DENNIS D., Ph.D. (Florida State University)
Associate Professor of Statistics (1973-1977).

WADDILL, V. H., Ph.D. (Clemson)
Assistant Professor (Assistant Entomologist), Agricultural Research and Education Center, Homestead IFAS, (1975-1975).

WADLEY, JAMES BRYCE, J.D. (Tulane)
Associate in Law, Associate for Rural Development (1973-1973).

WAGLEY, CHARLES W., Ph.D. (Columbia University)
Graduate Research Professor of Anthropology (1971-1971).

WAGLOW, IRVING FREDERICK, Ed.D. (New York University)
Professor of Physical Education (1946-1965).

WAGNER, JAMES T., M.Div., (University of Florida)
Director of Pastoral Care, Shands Teaching Hospital and Shands Teaching Hospital & Clinics (1972-1973).

WAGNER, PATRICIA ANN, Ph.D. (University of Wisconsin)
Assistant Professor (Assistant Human Nutritionist), IFAS (1975-1975).

WAGNER, WILLIAM GRANT, M. Arch. (Texas A & M University)
Director of Bureau of Research, Professor of Architecture (1964-1972).

WAHL, F. MICHAEL, Ph.D. (University of Illinois)
Associate Dean of the Graduate School, Associate Director of Sponsored Research, and Professor of Geology (1969-1973).

WAITE, BENJAMIN HUGO, Ph.D. (University of California)
Research Scientist, International Programs, IFAS, Bolivia (1973-1973).

WAITES, ROBERT ELLSWORTH, Ph.D. (Ohio State University)
Associate Professor (Associate Entomologist), IFAS, (1951-1968).

WAKEMAN, DONALD LEE, M.S.A. (University of Florida)
Professor (Associate in Animal Husbandry), IFAS (1957-1975).

WALDBILLIG, ROBERT J., Ph.D. (University of Minnesota)
Assistant Professor of Psychology (1976-1976).

WALDO, TOMMY RUTH, Ph.D. (University of Florida)
Professor of English (1955-1976).

WALKER, DON W., Ph.D. (Texas Christian University)
Associate Professor of Neuroscience, VAH (1970-1975).

WALKER, R. DIXON, III, M.D. (University of Miami)
Chairman, Medical Selection Committee, Professor of Surgery and Pediatrics (1970-1976).

WALKER, ROBERT DIXON, JR., M.S.
Professor of Chemical Engineering (1944-1969).

WALKER, R. E., Ph.D. (University of Chicago)
Assistant Professor (1971-1971).

WALKER, THOMAS JEFFERSON, Ph.D. (Ohio State University)
Professor (Entomologist), IFAS (1957-1971).

WALKER, THOMAS S., M.S. (University of Florida)
Assistant Research Scientist, International Programs, IFAS, El Salvador (1977-1977).

WALL, GEORGE BRYAN, Ph.D. (North Carolina State University)
Assistant Professor, Food and Resource Economics Department, IFAS (1976-1976).

WALLACE, HAROLD DEAN, Ph.D. (Cornell University)
Professor (Animal Nutritionist) and Chairperson, IFAS (1950-1976).

WALLACE, HARVEY ALLEN, Ph.D. (University of Toledo)
Assistant Professor of Health Education (1974-1976).

WALLBRUNN, HENRY MAURICE, Ph.D. (University of Chicago)
Associate Professor of Zoology (1951-1963).

WALSH, EDWARD KYRAN, Ph.D. (Brown University)
Professor of Engineering Sciences (1970-1975).

WALSH, THOMAS, Ph.D. (University of Chicago)
Associate Professor of Mathematics (1971-1975).

WALTERS, YANCEY BAILEY, M.S. (Auburn University)
Professor (Extension Home Economist-ENP Coordinator), IFAS (1965-1965).

WALTON, MARGARET N., M.S. (Florida State University)
Assistant Professor in Extension Home Economics, FAMU, IFAS (1973-1973).

WALTON, SHIGEKO SATO, M.F.A.
Instructor in Art (1974-1975).

WALTON, TODD L., JR., M.E. (University of Florida)
Assistant in Engineering of Coastal and Oceanographic Engineering Laboratory (1973-1973).

WAN, ELIZA H., M.A. in L.S.
Associate Librarian, Documents (1968-1973).

WANG, YU-HWA, Ph.D. (University of Southern California)
Assistant Professor of Coastal & Oceanographic Engineering (1973-1973).

WARD, COLEMAN Y., Ph.D. (Virginia Polytechnic Institute)
Professor and Chairperson of Agronomy, IFAS (1974-1974).

WARD, DANIEL BERTRAM, Ph.D. (Cornell University)
Professor of Botany, IFAS (1958-1975).

WARD, GRAY DOUGLAS, Ph.D. (University of Maryland)
Associate Professor of Electrical Engineering and Physics (1970-1975).

WARD, JOHN LAWRENCE, M.A., M.F.A.
*Associate Professor of Art (1966-1975).**

WARD, PETER, LL.B. (Cornell University)
Professor of Law (1972-1972).

WARD, PHILLIP A., M.F.A.
Professor of Art (1959-1977).

WARD, RONALD W., Ph.D. (Iowa State University)
Assistant Professor, Food and Resource Economics Department, IFAS (1970-1970).

WARDOWSKI, WILFRED F., Ph.D. (Michigan State University)
Extension Associate Professor (Associate Horticulturist), IFAS, AREC-Lake Alfred (1969-1974).

WARE, WILLIAM B., Ph.D. (Northwestern University)
Professor of Education (1968-1976).

WARHEIT, GEORGE J., Ph.D. (Ohio State University)
Professor of Sociology in Psychiatry (1969-1974).

WARNICK, ALVIN CROPPER, Ph.D. (University of Wisconsin)
Professor (Animal Physiologist) IFAS, (1953-1962).

WARREN, JOSEPH W., M.D. (West Virginia University)
Assistant Professor of Medicine, JHEP (1977-1977).

WARREN, MICHAEL EDWARD, Ph.D. (Massachusetts Institute of Technology) *Assistant Professor of Electrical Engineering (1974-1974).*

WASLOSKI, JOHN EDWARD, M.S. (Rensselaer)
Commander, U.S. Navy, Professor of Naval Science

WASS, HANNELORE LINA, Ph.D. (University of Michigan)
Professor of Education (1969-1975).

WATERS, WILLIE ESTEL, Ph.D. (University of Florida)
Professor (Horticulturist) and Center Director, Agricultural Research and Educational Center, Bradenton, IFAS (1960-1968).

WATSON, JAMES KENNETH, Ph.D. (Rice University)
Associate Professor of Electrical Engineering (1966-1966).

WATSON, KATHRYN J., B.A. (Florida Presbyterian)
Instructor, P. K. Yonge Laboratory School (1973-1976).

WATSON, MARY CALDWELL, B.S. in L.S.
Associate Librarian, Reference and Bibliography (1960-1970).

WATTENBARGER, JAMES L., Ed.D. (University of Florida)
Professor of Education and Chairperson, Educational Administration Department (1968-1968).

WATTERSON, JAMES W., Ph.D. (University of Florida)
Associate Engineer in Electrical Engineering (1977-1977).

WATTLEWORTH, JOSEPH A., Ph.D. (Northwestern University)
Professor of Civil Engineering (1969-1969).

WATTS, EARLE HUNT, B.S.
Assistant Professor of Mechanical Engineering (1957-1957).

WEAR, RICHARD ARLEN, Ph.D. (Florida State University)
Associate Professor of Humanities (1970-1976).

WEATHERSPOON, DAN MOBLEY, Ph.D. (Colorado State University)
Assistant Professor (Assistant Horticulturist), IFAS, Agricultural Research Center, Monticello (1973-1973).

WEAVER, ANNA LOUISE, B.S. in L.S.
*Librarian in Charge of Architecture and Fine Arts Library (1959-1973).**

WEAVER, WILLIAM BANCROFT, M.S. (Florida State University)
Associate Librarian, IFAS (1964-1969).

WEBB, D. NEIL, B.S., R.A.
Associate Director, Division of Planning and Analysis (1972-1974).

WEBB, DANIEL WARREN, Ph.D. (Kansas State University)
Associate Professor (Extension Dairyman), IFAS (1971-1976).

WEBB, JEANINNE N., Ed.D. (University of Florida)
Associate Professor and Director, Office of Instructional Resources (1972-1972).

WEBB, RODMAN, B., Ed.D. (Rutgers University)
Associate Professor of Education (1972-1977).

WEBB, SAWNEY DAVID, Ph.D. (University of California)
Curator of Vertebrate Paleonotology, Florida State Museum, Joint Professor of Latin American Studies, Zoology and Geology (1964-1975).

WEBB, W. B., Ph.D. (State University of Iowa)

WEBBER, RAYMOND T., D.D.S., (U. of Missouri at Kansas)
Assistant Professor of Endodontics, College of Dentistry (1977-1977).

WEBER, F. THOMAS, M.D. (University of Cincinnati)
Assistant Professor of Pediatrics and Assistant Director of Pediatric Clinic (1975-1975).

WEBER, W. ROBERT, M.D. (University of Cincinnati)
Assistant Professor of Pathology (1977-1977).

WEEMS, HOWARD VINCENT, JR., Ph.D. (University of Ohio)
Professor (Entomologist), IFAS, DPI (1966-1973).

WEHLBURG, ALBERT F. C., Ed.D.
Assistant Professor of Theatre (1966-1973).

WEIDHAAS, DONALD E., Ph.D. (Cornell University)
Professor (Entomologist) and Investigations Leader, USDA, IFAS, (1967-1967).

WEINER, ROY S., M.D. (State University of New York)
Associate Professor of Medicine and Chief of Oncology (1976-1976).

WEINGARTNER, DAVID PETER, Ph.D. (Michigan State University)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research Center, Hastings (1969-1975).

WEINSHELBAUM, ARLENE M., M.D. (University of Chicago)
Assistant Professor of Radiology, VAH (1973-1973).

WEISMANTEL, WILLIAM LOUIS, LL.B. (Harvard Law School), Ph.D. (Harvard University)
Professor of Urban and Regional Planning (1975-1975).

WEISS, DAVID, LL.B. (Harvard University)
Associate Law Librarian (1969-1969).

WELCH, PAULA DEE, Ed.D. (University of North Carolina)
Assistant Professor of Professional Physical Education (1974-1974).

WELDY, PARK L., D.M.D. (University of Florida)
Assistant Professor of Community Dentistry, College of Dentistry (1976-1976).

WELLBORN, CHARLES G., JR., M.A.
Professor of Journalism and Communications (1966-1976).

WELLER, HENRY RICHARD, Ph.D. (Duke University)
Associate Professor of Physics (1968-1973).

WELLS, EDWARD L., B.F.A.
Assistant in Broadcasting in Journalism and Communications (1969-1973).

WELSCH, BOYD B., D.M.D. (University of Florida)
Assistant Professor of Occlusion and Fixed Prosthodontics, College of Dentistry (1977-1977).

WELSCH, WALTER ROLAND, M.Ed.
Associate Professor of Physical Education and Assistant Track Coach (1954-1972).

WELTNER, WILLIAM, JR., Ph.D. (University of California)
Professor of Chemistry (1966-1966).

WENZEL, EVELYN L., Ed.D. (Columbia University)
*Professor of Education (1958-1970).**

WERGE, ROBERT WENDELL, Ph.D. (University of Florida)
Post Doctoral Fellow, International Programs, IFAS, Peru (1975-1975).

WERNER, LINDA L., D.V.M. (Ohio State)
Assistant Professor, College of Veterinary Medicine (1977-1977).

WEST, FRED E., Ph.D. (University of Florida)
Assistant Professor of Allied Health Program (1976-1976).

WEST, GWENETH LUCRETIA, M.F.A. (U. of Texas)
Assistant Professor of Theatre (1976-1976).

WEST, ROGER L., Ph.D. (Texas A&M University)
*Assistant Professor of Animal Science (1969-1973).**

WEST, SHERLIE HILL, Ph.D. (University of Illinois)
Professor (Agronomist) and Assistant Dean for Research, IFAS (1972-1972).

WESTBERRY, GEORGE O., M.S. (University of Georgia)
Assistant Professor (Farm Management & Production Economics), Food and Resource Economics, IFAS, AREC, Quincy (1973-1973).

WESTFALL, MINTER JACKSON, JR. Ph.D. (Cornell University)
Professor of Zoology and Entomology (1947-1969).

WESTON, EDWARD G., Ph.D. (Florida State University)
*Associate Professor of Journalism and Communications (1970-1977).**

WETHINGTON, JOHN ABNER, JR., Ph.D. (Northwestern University)
Professor of Nuclear Engineering Sciences (1954-1960).

WETTERQVIST, ORJAN FREDERICK, M.A. (Royal Institute of Technology)
Associate Professor of Architecture (1969-1974).

WEYRAUCH, WALTER OTTO, J.S.D. (Yale University)
Professor of Law (1957-1960).

WHAN, ALEXANDER R., M.B.A. (George Washington University)
Director of Clinical Services, Shands Teaching Hospital & Clinics (1977-1977).

WHEATON, THOMAS ADAIR, Ph.D. (University of California)
Associate Professor (Associate Horticulturist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1963-1970).

WHEELER, WILLIS BOLY, Ph.D. (Pennsylvania State University)
Associate Professor (Associate Biochemist), IFAS (1966-1972).

WHELAN, SAMUEL CLEMENT, Ph.D. (University of Maryland)
Assistant Professor (Assistant Animal Scientist), IFAS, Agricultural Research and Education Center, Quincy (1976-1976).

WHIDDON, NANCY SUE, Ed.D. (Florida Atlantic University)
Assistant Professor of Professional Physical Education (1972-1976).

WHITCOMB, WILLARD HALL, Ph.D. (Cornell University)
Professor of Entomology (Entomologist), IFAS (1967-1967).

WHITE, ARTHUR O., Ed.D. (New York, Buffalo)
Associate Professor of Education (1970-1975).

WHITE, CLEMENTINE BERTHA, M.M.
Associate Professor of Music (1966-1975).

WHITE, FRANKLIN HENRY, Ph.D. (University of Illinois)
Professor (Bacteriologist), College of Veterinary Medicine, IFAS (1955-1967).

WHITE, JAKE B., B.S.A.
Professor (Bacteriologist), College of Veterinary Medicine, IFAS (1955-1967).

WHITE, JAMES MARION, Ph.D. (Ohio State University)
Assistant Professor (Assistant Horticulturist), IFAS Agricultural Research and Educational Center, Sanford (1974-1974).

WHITE, KEITH D., Ph.D. (Brown University)
Assistant Professor of Psychology (1976-1976).

WHITE, LARRY D., Ph.D. (University of Arizona)
Associate Professor (Range Ecosystem Management), IFAS (1970-1976).

WHITE, NEIL L., Ph.D. (Harvard)
Assistant Professor of Mathematics (1973-1973).

WHITE, TONY ROBERT, M.A.E. (Oklahoma State Univ.)
Assistant Professor of Architecture (1969-1973).

WHITEHEAD, WILLIAM J.
Assistant in Engineering in Civil Engineering (1968-1975).

WHITESIDE, JACK OLIVER, Ph.D. (University of London)
Professor (Plant Pathologist), IFAS, Agricultural Research Educational Center, Lake Alfred (1967-1973).

WHITLEY, ESTOYA WILLIA, M.A. (Appal St. University)
Instructor, P. K. Yonge Laboratory School (1958-1962).

WHITNEY, ELLSWORTH DOW, Ph.D. (New York University)
Professor of Materials Science and Engineering (1970-1975).

WHITNEY, JODIE DOYLE, Ph.D. (University of Oklahoma)
Associate Professor (Associate Agricultural Engineer), IFAS, Agricultural Research and Educational Center Lake Alfred (1965-1972).

WHITTAKER, MILTON DWAINE, M.S. (Cornell University)
Assistant in Research, International Programs, IFAS, Bolivia (1976-1976).

WHITTINGTON, RICHARD M., M.D. (Jefferson Medical College)
Assistant Dean for VA Hospital Relations, Chief of Staff, Gainesville VAH., Professor of Medicine (1976-1976).

WHITTY, ELMO BENJAMIN, Ph.D. (North Carolina State University)
Associate Professor (Associate Agronomist), IFAS (1966-1971).

WHITWORTH, JAY M., M.D. (Indiana University)
Assistant Professor of Pediatrics (JHEP) (1972-1972).

WHORTON, JAMES E., Ed.D. (Colorado State University)
Associate Professor of Education (1969-1974).

WICKENDEN, THOMAS, M.D. (Columbia College)
Assistant Professor of Community Health and Family Medicine (1975-1975).

WICKES, FRANK BOVEE, M.M.
Associate Professor of Music and Director of Bands (1973-1977).

WICKS, LYLE L., M.S. (Cornell University)
Assistant Research Scientist and Agricultural Education Specialist (1978-1978).

WICKWIRE, NANN A., D.D.S. (University of Maryland), M.S.D. (Baylor University)
Professor and Chairwoman of Orthodontics, College of Dentistry (1974-1974).

WIEDEGREEN, ERIC ALBERT, M.Arch.
Assistant Professor of Architecture (1975-1975).

WIGGINS, J. ARDENE, B.S. (University of Florida)
Director of Academic Support Programs (1971-1972).

WILCOX, CHARLES JULIAN, Ph.D. (Rutgers University)
Professor (Geneticist), IFAS (1959-1971).

WILCOX, MERRILL, Ph.D. (North Carolina State University)
Professor (Agronomist), IFAS (1960-1973).

WILDER, BUNA J., M.D. (Duke University)
Professor of Neurology and Neuroscience, VAH (1962-1973).

WILDT, ALBERT R., Ph.D. (Purdue University)
Associate Professor of Marketing (1971-1976).

WILENSKY, NORMAN MARVIN, Ph.D. (Yale University)
Associate Professor of History and Undergraduate Coordinator of History (1962-1969).

WILFRET, GARY JOE, Ph.D. (University of Hawaii)
Associate Professor (Associate Geneticist), IFAS, Agricultural Research and Educational Center, Bradenton (1969-1974).

WILKERSON, G. STEVEN, B.A. (University of the South)
Vice President for Development and Alumni Affairs (1973-1973).

WILKERSON, S. JEFFREY K., Ph.D. (Tulane University)
Associate Curator of Anthropology, Florida State Museum and Associate Professor of Anthropology (1972-1977).

WILKIE, WILLIAM L., Ph.D. (Stanford University)
Professor of Marketing (1974-1977).

WILKINSON, ROBERT CLEVELAND, Ph.D. (University of Wisconsin)
Professor (Entomologist), IFAS (1960-1971).

WILKOWSKI, HOWARD HUGH, Ph.D. (Iowa State University)
Professor (Dairy Technologist) and Assistant Dean for Research, IFAS (1950-1968).

WILLARD, DEL, M.S. (Western Reserve University)
Instructor in Mathematics (1960-1960).

WILLIAM, RAY D., Ph.D. (Purdue University)
Assistant Professor (Extension Vegetable Specialist) IFAS (1977-1977).

WILLIAMS, AUBREY LAKE, Ph.D. (Yale University)
Graduate Research Professor of English (1958-1961).

WILLIAMS, CHARLES STANLEY, M.S. (Western Kentucky University)
Instructor of Physical Education (1972-1972).

WILLIAMS, CHARLES STANLEY, M.S. (Western Kentucky University)
Instructor of Physical Education (1972-1972).

WILLIAMS, CLYDE M., Ph.D. (Oxford Univ.) M.D. (Baylor Univ.)
Professor and Chairperson, Radiology (1960-1965).

WILLIAMS, DAVID D., Ph.D. (Univ. of Florida)
*Assistant Professor, Colleg of Nursing (1970-1975).**

WILLIAMS, DONALD EDWARD, Ph.D. (Northwestern University)
Professor of Speech (1959-1971).

WILLIAMS, EMMET LOUIS, Ph.D. (George Peabody College for Teachers)
Professor of Education and Associate Dean, College of Education (1964-1972).

WILLIAMS, HIRAM D., M.Ed.
Professor of Art (1960-1968).

WILLIAMS, NANCY LYNNE, M.S.L.S.
Associate Librarian, Catalog (1971-1977).

WILLIAMS, PAMELA D., M.S. (Florida State University)
Assistant Law Librarian (1973-1973).

WILLIAMS, ROBERT E., M.A., M.E. (University of Florida)
Director of Computer Operations, Shands Teaching Hospital & Clinics (1970-1977).

WILLIAMS, WILLIAM N., Ph.D. (University of Florida)
Associate Professor of Communicative Disorders and Department of Basic Dental Sciences, College of Dentistry (1969-1976).

WILLIAMS, WINTON E., LL.M. (Yale)
Professor of Law (1969-1977).

WILLIS, SUSAN E., M.S.N. (Yale University)
Instructor, College of Nursing (1976-1976).

WILLMORE, LUTHER J., M.D. (St. Louis University)
Assistant Professor of Neurology, VAH (1975-1975).

WILLOCKS, R. MAX, M.L.S. (Peabody College)
Associate Director for Public Service (1976-1976).

WILMOT, DAVID L., M.A.
Professor of Music (1962-1968).

WILSON, DAVID C., Ph.D. (Rutgers)
Associate Professor of Mathematics (1972-1973).

WILSON, HAROLD ARNOLD, Ph.D. (University of Iowa)
Associate Professor of Social Sciences and History (1958-1967).

WILSON, HENRY RUSSELL, Ph.D. (University of Maryland)
Professor (Poultry Physiologist), IFAS (1962-1974).

WILSON, JENNET MAE, M.A. (Columbia University)
Associate Professor, College of Nursing (1957-1975).

WILSON, MARGARET E., M.N. (University of Florida)
Assistant Professor, College of Nursing (1977-1977).

WILSON, WILLIAM CURTIS, Ph.D. (University of Florida)
Adjunct Associate Professor (Associate Plant Physiologist), IFAS, DC, AREC-Lake Alfred (1966-1973).

WILTBANK, WILLIAM JOSEPH, Ph.D. (University of Florida)
Associate Professor and Acting Chairman (Associate Horticulturist,) IFAS (1968-1977).

WINARSKY, IRA HAROLD, M.F.A. (Temple University)
Associate Professor of Architecture (1972-1976).

WINEFORDNER, JAMES DUDLEY, Ph.D. (University of Illinois)
Graduate Research Professor of Chemistry (1959-1976).

WING, ELIZABETH S., Ph.D. (University of Florida)
Associate Curator of Zooarchaeology, Florida State Museum; Associate Professor of Anthropology and Zoology (1961-1973).

WING, JAMES MARVIN, Ph.D. (Iowa State University)
Professor (Animal Physiologist), IFAS (1951-1966).

WINGE, GAYLORD H., JR., M.B.A. (U. of Florida)
Captain, U.S. Air Force, Assistant Professor of Aerospace Studies (1976-1976).

WINIUS, GEORGE DAVISON, Ph.D. (Columbia University)
Associate Professor of History (1965-1969).

WINKLER, ROBERT E., M.H.A. (Washington University)
Assistant Professor of Allied Health Program (1975-1975).

WINOKUR, CHARLOTTE, B.S. (University of Connecticut)
Visiting Assistant Professor of Physical Therapy (1977-1977).

WISEMAN, BILLY R., Ph.D. (Kansas State University)
Associate Professor of Entomology, IFAS (1970-1970).

WISLEY, PHILLIP PAUL, M.A. Arch. (University of Florida)
Assistant Professor of Architecture (1976-1976).

WITTIG, HEINZ JOSEPH, M.D. (University of Munich)
Professor of Pediatrics, and Chief, Allergy and Clinical Immunology (1968-1973).

WITTKOPF, BARBARA JEAN, M.S.L.S.
Associate Librarian, Reference and Bibliography (1970-1975).

WITTKOPF, EUGENE R., Ph.D. (Syracuse University)
Associate Professor of Political Science (1970-1975).

WITTMER, PAUL JOSEPH, Ph.D. (Indiana State University)
Professor and Chairperson, Department of Counselor Education (1968-1974).

WOESTE, JOHN THEODORE, Ph.D. (University of Wisconsin-Madison)
Professor, Dean for Cooperative Extension Services, IFAS (1976-1976).

WOLF, EMIL ANDREW, M.S. (Purdue University)
Professor (Horticulturist), IFAS Agricultural Research and Education Center, Belle Glade (1948-1966).

WOLFF, RONALD G., Ph.D. (University of California)
Assistant Professor of Zoology (1973-1973).

WOLFSON, MORTON, M.Ed.
Assistant Professor of Behavioral Studies, Adviser (1965-1968).

WOLKING, WILLIAM, Ph.D. (University of Minnesota)
*Professor of Education (1968-1973).**

WOLTZ, SHREVE SIMPSON, Ph.D. (Purdue University)
Professor (Plant Physiologist), IFAS, Agricultural Research and Educational Center, Bradenton (1953-1968).

WOOD, CHARLES H., Ph.D. (University of Texas at Austin)
Assistant Professor of Sociology (1977-1977).

WOOD, FRANCIS ALOYSIUS, Ph.D. (University of Minnesota)
Professor (Plant Pathologist), and Dean for Research Administration, IFAS (1977-1977).

WOOD, FRANK BRADSHAW, Ph.D. (Princeton University)
Professor of Astronomy, Director of Optical Observatories (1968-1971).

WOODARD, JAMES C., D.V.M., Ph.D. (Auburn University, MIT)
Associate Professor of Veterinary Medicine, Associate Professor and Head, Division of Comparative Pathology (1958-1974).

WOODHAM, BRANAN, M.Ed. (Auburn University)
Residence Life Coordinator, Student Housing (1977-1977).

WOODRUFF, ROBERT EUGENE, Ph.D. (University of Florida)
Associate Professor (Associate Entomologist), IFAS, DPI (1966-1973).

WOODRUFF, WILLIAM, D.Phil. (University of Nottingham, England)
Graduate Research Professor of Economic History and Professor of Economics (1966-1968).

WOODS, CHARLES T., M.A. (University of Florida)
Assistant Professor (Assistant Editor) Editorial Department, IFAS (1966-1968).

WOODWARD, EDWARD R., M.D. (University of Chicago)
Professor and Chairperson, Department of Surgery (1957-1957).

WOOLFORK, ROBERT, J.D. (University of Florida)
Assistant Dean for Minority Affairs (1977-1977).

WORKMAN, RALPH B., JR., Ph.D. (Oregon State University)
Associate Professor (Associate Entomologist), IFAS, Agricultural Research Center, Hastings (1958-1967).

WRAGGE, JOHN H., Ph.D. (U. of Houston), C.P.A. (Illinois)
Assistant Professor of Accounting (1975-1975).

WRIGHT, DAVID LEE, Ph.D. (Virginia Poly. Inst. & St. Univ.)
Assistant Professor (Assistant Agronomist), IFAS, Agricultural Research and Education Center, Quincy (1977-1977).

WRIGHT, ROBERT G., Ph.D. (University of Kansas)
Associate Professor of Education (1970-1976).

WROE, MARTHA, M.A. (Stanford University)
Associate Professor of Physical Therapy and Neurology (1959-1970).

WYATT, JOHN WALTON, S.J.D. (George Washington University)
Professor of Business Law (1948-1956).

WYRICK, JEAN C., Ph.D. (University of Texas, Austin)
Assistant Professor of English (1975-1975).

WYNNE, JAMES W., M.D. (Cornell University)
Assistant Professor of Medicine and Anesthesiology, Chief of Pulmonary Services, Coordinator of Medical Intensive Care Unit and Director of Pulmonary Functions Lab (1973-1974).

YANG, MARK CHAO-KUEN, Ph.D. (University of Wisconsin)
Associate Professor of Statistics (1970-1975).

YATES, EDWARD D., M.A.
Associate Professor of Journalism and Communications (1965-1976).

YELLEN, VICTOR M., M.S. (Auburn University)
Assistant to the Vice President for Academic Affairs (1970-1972).

YEN, ALICE BING, M.S.L.S.
Associate Librarian, Catalog (1966-1972).

YII, ROLAND, Ph.D. (University of Pennsylvania)
Research Scholar, Research Scientist of Electrical Engineering; Eglin AFB (1968-1976).

YOH, R. W., Ph.D. (Suny)
Assistant Professor of Mathematics (1972-1973).

YOHO, WILLIAM HERBERT, M.S.
Associate Professor of Physical Sciences and Geology (1951-1971).

YORTON, JOAN BANNISTER, Ph.D. (University of Florida)
Instructor in Physical Sciences (1967-1970).

YOST, RICHARD LEE, Pharm.D. (Phila. Coll of Pharmacy & Science)
Assistant Professor of Pharmacy (1974-1974).

YOUNG, CHARLES JOHN, JR., M.S. (University of Florida)
Associate Director, NERDC (1971-1976).

YOUNG, DAVID G., M.S. (University of Florida)
Associate in Entomology, IFAS (1976-1976).

YOUNG, JERALD WAYNE, Ph.D. (Yale University)
Assistant Professor of Management (1974-1974).

YOUNG, MARTIN D., Sc.D. (Johns Hopkins University)
Research Professor, College of Veterinary Medicine, Department of Veterinary Science; Department of Immunology and Medical Microbiology (1974-1975).

YOUNG, MICHAEL FRANCIS, Ph.D. (Ohio University)
Assistant Professor of Interior Design (1977-1977).

YOUNG, MICHAEL J., Ph.D. (Washington State University)
Assistant Professor of Fruit Crops (1974-1974).

YOUNG, ROGER H., Ph.D. (U. of Calif. in Los Angeles)
Adjunct Associate Professor in Fruit Crops, USDA, IFAS (1972-1975).

YOUNGS, MARIAN AMELIA, M.A. in L.S.
*Librarian, Assistant Chairperson, Catalog (1934-1979).**

YOZGATLIOGLU, CUEYT A., M.D. (University of Istanbul)
University Psychiatrist (1963-1963).

YU, SHIH CHENG, Ph.D. (University of Iowa)
Professor of Accounting (1967-1968).

YUAN, TZU LIANG, Ph.D. (Ohio State University)
Professor of Soil Science (Soil Chemistry), IFAS (1955-1972).

YURGILAS, KATHLEEN LOUISE, M.A.
Instructor in Art (1974-1976).

ZACHARIAH, GERALD L., Ph.D. (Purdue University)
Professor and Chairperson, Agricultural Engineering, IFAS (1975-1975).

ZAHN, MARKUS, Sc.D. (Massachusetts Institute of Technology)
Associate Professor of Electrical Engineering (1970-1975).

ZAM, STEPHEN G. III, Ph.D. (Univ. of Southern California)
Associate Professor, Microbiology and Cell Science, IFAS (1966-1966).

ZARANTONELLO, S. E., Ph.D. (University of Wisconsin)
Assistant Professor of Mathematics (1972-1973).

ZAUNER, CHRISTIAN WALTER, Ph.D. (Southern Illinois Univ.)
Professor of Professional Physical Education and Professor of Medicine (1965-1971).

ZEIGLER, C. DAWSON, M.S.B.C.
*Associate Professor of Building Construction (1960-1975).**

ZEMAN, JOSEPH JAY, Ph.D. (University of Chicago)
Professor of Philosophy (1966-1973).

ZEPP, GLENN ARTHUR, Ph.D. (Penn State University)
Associate Professor, Food and Resource Economics Department, USDA, IFAS (1971-1971).

ZETTLER, FRANCIS WILLIAM, Ph.D. (Cornell University)
Professor (Plant Pathologist), IFAS (1966-1976).

ZILLER, ROBERT C., Ph.D. (University of Michigan)
Professor of Psychology (1970-1970).

ZIMMERMAN, LELAND L., Ph.D. (University of Wisconsin)
Professor of Theatre (1955-1968).

ZIMPFER, PAMELA M., M.Ed. (Univ. of Florida)
Coordinator, Department of Extended Services, Division of Continuing Education (1975-1975).

ZIMPFER, WALTER HENRY, M.S. (Rutgers University)
*Associate Professor of Civil Engineering (1950-1956).**

ZITTER, THOMAS ANDREW, Ph.D. (Michigan State University)
Associate Professor (Associate Plant Pathologist), IFAS, Agricultural Research and Educational Center, Belle Glade (1968-1974).

ZOLTEK, JOHN, JR., Ph.D. (California Institute of Tech.)
Associate Professor of Environmental Engineering Sciences (1972-1976).

ZOLTEWICZ, JOHN ANDREW, Ph.D. (Princeton University)
Professor of Chemistry (1963-1973).

ZORNETZER, STEVEN F., Ph.D. (University of California)
Associate Professor of Neuroscience and Chairman, Phase A.

ZUBERER, DAVID ALAN, Ph.D. (University of South Florida)
Assistant Research Scientist, IFAS (1976-1976).

ZUMBRO, James Mark, M.M.
Associate Professor of Music (1969-1974).

ZWEIG, MARILYN B., Ph.D. (University of Rochester)
Associate Professor of Philosophy (1966-1977).

UNIVERSITY OF FLORIDA AGRICULTURAL EXTENSION SERVICE COUNTY AND HOME ECONOMICS AGENTS 1978-1979

AALBERG, RICHARD M., M.S.
County Extension Director (II), Manatee County (1975-1976).

ALEXANDER, CLINK, M.S.
Extension Agent-Agronomy (I), Madison County (1975-1975).

ALLEN, EDWARD, M.S.A.
Extension Agent (III), Ornamentals, (1960-1969).

ALSTON, ARTHUR DEAN, M.Ag.
County Extension Director (II), Citrus County (1970-1977).

ANDERSON, MAE MILLAR, B.S.
Extension Home Economics Agent (III), Madison County (1963-1977).

ANDERSON, MARY ETHEL, M.S.
Extension Home Economics Agent (III), Columbia County (1969-1977).

ANDREWS, ADAM TUCKER, M.Ag.
County Extension Director (III), Alachua County (1954-1970).

ANDREWS, RANCE ADAMS, B.S.A.
County Extension Director (II), Hamilton County (1953-1955).

AYERS, ALICE M. BLACKBURN, M.Ret.
Extension Agent 4-H (II), Lake County (1968-1973).

BALDWIN, JOHN ALLEN, M.S.A.
County Extension Director (I), Levy County (1973-1973).

BANKS, ROSALEE, B.S.
Extension Agent 4-H (I), Putnam County (1972-1972).

BARBER, LINDA B., B.S.
Extension Home Economics Agent (II), Calhoun County (1971-1972).

BARGE, JANICE W., M.S.
Extension Agent (I), Home Economics, Pinellas County (1977-1977).

BARLOW, PHYLLIS W., M.Ed.
Extension Agent (II), Home Economics, Hendry County (1977-1977).

BARMBY, BRUCE ALAN, M.S.
*Extension Agent, Ornamentals & Vegetables (III), Orange County (1958-1969).**

BARNES, MARVIN, B.S.
Extension Agent-4-H (I), Jackson County (1975-1975).

BASS, BERNICE ODELL, M.S.A.
County Extension Director (III), Glades County (1956-1971).

BEEM, JEAN, M.S.A.
County Extension Director (IV), Hillsborough County (1948-1969).

BENTLEY, DICKI DRESBACH, B.S.
Extension Home Economics Agent 4-H (II), Gadsden County (1966-1976).

BIR, RICHARD EDWARD, M.S.
Extension Agent-Ornamentals (II), Alachua County (1972-1972).

BIZETTE, JUSTINE LAMBERT, B.S.H.E.
Extension Home Economics Agent (II), Dade County (1961-1969).

BOARD, SARAH MOORE, B.S.H.E.
Extension Home Economics Agent (I), Duval County (1970-1970).

BOND, SHIRLEY REBECCA, M.S.
Extension 4-H Agent (II), Pinellas County (1973-1976).

BOSS, FREDERICK EARL, M.A.
Extension Agent, Livestock (II), Palm Beach County, (1971-1971).

BOWMAN, LINDA KAY, M.S.
Extension Home Economics Agent (I), Escambia County (1973-1973).

BRACHHOLD, LINDA J., B.S.
Extension Agent, Ornamentals (I), Volusia County, (1976-1976).

BRADDOCK, THOMAS HANSEN, M.S.A.
County Extension Director (III), Duval County (1957-1969).

BRASHER, CHARLES LUTHER, M.S.
Extension Agent (I), FAMU, Jackson County (1974-1974).

BRENNEMAN, JOHN, M.A.
Extension Agent Diary (I) (1972-1976).

BRITTON, TAMER LAVERNE, M.Ed.
Extension Home Economics Agent (II), ENP Duval County (1972-1972).

BROCK, MARGUERITE RISH, B.S.H.E.
*Extension Home Economics Agent (II), St. Lucie County (1946-1962).**

BROCK, REBECCA, B.S.
Extension Agent (I), Home Economics, Highlands County (1977-1977).

BROOKS, LEON R., B.S.
Extension Agent (I), Agriculture and Community Resource Development, Madison County (1974-1974).

BROWN, NETTIE RUTH, B.S.H.E.
Extension Home Economics Agent (III), St. Johns County (1960-1969).

BROWN, REGINALD L., M.S.A.
Extension Agent (I), Multi County, Seminole County (1974-1974).

BROWN, WILLIAM I., M.S.
County Extension Director (I), Gilchrist County (1975-1975).

BUCKLAND, MARION L., B.S.
Extension Home Economics Agent (II), Alachua County (1974-1974).

BULLINGTON, DANNY M., M.S.
Extension Agent (I), 4-H Livestock, Levy County (1977-1977).

BURGESS, JANE RANDAL, B.S.H.E.
Extension Home Economics Agent (II), Jackson County (1954-1969).

BURGESS, RAYMOND HUNTER, M.S.A.
County Extension Director (III), Hendry County (1962-1969).

BURKE, PATRICIA A., B.S.
Extension Agent (I), 4-H, Alachua County (1977-1977).

BUSH, EILEEN K., M.S.
Extension Agent (I), Home Economics-ENP, Jackson County (1977-1977).

CAMERON, JOSEPHINE MOORE, M.Ag.
*Extension Home Economics Agent (III), Polk County (1953-1969).**

CANTY, BESSIE JACKSON, M.S.
Extension Home Economics Agent (III), Duval County (1963-1972).

CARR, HORACE MIXON, B.S.A.
County Extension Director (II), Bay County (1951-1951).

CASTENSON, PAUL, M.S.
County Extension Director (I), Dixie County (1975-1975).

CHAMPAGNE, ROY JEAN, M.S.
Extension Agent—Poultry (III), Dade County (1953-1969).

CHANDLER, ISAAC, JR., B.S.
Extension Agent (II), Hamilton County (1952-1963).

CHRISTENBERRY, LAMAR, M.S.
County Extension Director (I), Liberty County (1976-1976).

CLARK, BERNARD HENTZ, B.S.A.
Extension Agent—Livestock (II), Gadsden County (1948-1969).

CLARK, SHIRLEY T., B.S.
Extension Home Economics Agent (II), Gadsden County (1974-1974).

CLARK, VIRGINIA CARR, B.S.H.E.
*Extension Home Economics Agent (II), Walton County (1953-1960).**

CLASSON, DOROTHY JACOBSON, B.S.
Extension Home Economics Agent (III), Lee County (1959-1969).

COBB, LEONARD CLARENCE, M.Ag.
County Extension Director (IV), Jackson County (1951-1969).

COCHRAN, NANNIE MOXLEY, B.S.
Extension Home Economics Agent (II), Hardee County (1971-1971).

COHN, LAURA J., B.S.
Extension Agent (I), 4-H ENP, Dade County (1977-1977).

COLEMAN, DENISE L., M.S.
Extension Home Economics Agent (I), Collier County (1974-1974).

COLLINS, LEALA REAVES, B.S.
Extension Home Economics Agent (II), Orange County (1953-1969).

COLLINS, WILLIAM EARL, B.S.A.
Extension Agent (I), Livestock, Jackson County, (1951-1963).

COOMBS, VIRGINIA HILL, B.S.
Extension Home Economics Agent—4-H (II), Hillsborough County (1954-1969).

COSTOPOULOS, VICKI, B.S.
Extension Agent 4-H, (I), Suwannee County (1976-1976).

COTTON, CHARLA J., M.S.
Extension Agent-Home Economics (II), Okaloosa County (1975-1975).

COWEN, EDWARD J., M.Ag.
County Extension Director (IV), Escambia County (1955-1977).

CUMMINGS, JAMES FREDERICK, M.Ag.
Extension Agent (II), Broward County (1961-1969).

CUNNINGHAM, BRENDA JO, B.S.
Extension Home Economics Agent (I), Okeechobee County (1974-1974).

CURTIS, ROBERT GEORGE, B.S.A.
County Extension Director (III), Lee County (1952-1970).

DAIGLE, LOUIS JOHN, M.Ag.
Extension Agent (III), Ornamentals, Dade County (1960-1970).

DALTON, JOSEPH DAVID, Ph.D. (University of Massachusetts)
Extension Agent (IV), Soils, Dade County (1961-1975).

DAVIS, DORIS G., B.S.
Extension Agent (I), Home Economics, Brevard County (1977-1977).

DAVIS, HENRY PITTMAN, B.S.A.
County Extension Director (III), Taylor County (1950-1954).

DAVIS, JOHNNIE EVERETT, M.Ag.
County Extension Director (III), Washington County (1948-1969).

DAVIS, ROBERT MARION, M.Ag.
County Extension Director (III), Polk County (1960-1969).

DAWSON, ALBERT DOUGLAS, M.Ag.
County Extension Director (III), Hernando County (1966-1969).

DELLARA, JUDY M., B.S.
Extension Home Economics Agent (I), Dade County (1975-1975).

DEMAREE, MICHAELE, M.S.A.
County Extension Director (II), Pasco County (1966-1972).

DEMONT, DEBRA J., B.S.
Extension Agent-Home Economics Program Leader (I), Lafayette County (1976-1976).

DILBECK, JAMES DAVID, M.S.
Extension Agent (III), Vegetables, Multi-County (1969-1975).

DILLARD, JEANETTE B., B.S.
Extension Agent-4-H (I), Pasco County (1976-1976).

DONAHOE, MICHAEL C., M.S.
Extension Agent (I), Pest Management, Multi-County (1977-1977).

DORSCHEL, DUSKA McCANN, M.S.H.E.
Extension Home Economics Agent (I), Duval County (1973-1973).

DOWNING, LELIA, M.S.
Extension Home Economics Agent (I), Alachua County (1976-1976).

DRAVES, DOROTHY ENGLE, B.S.H.E.
Extension Home Economics Agent (III), Pinellas County (1962-1969).

DUKES, NEAL MATTHEW, B.S.
County Extension Director (III), Columbia County (1952-1969).

DURDEN, BOBBY RAY, M.Ag.
County Extension Director (III), Wakulla County (1961-1968).

DUSSEAULT, BEVERLY, M.S.
Extension Agent Home Economics Program Leader (I), Wakulla County (1974-1974).

ELMORE, ANNIE SUE, M.S.
Extension Home Economics Agent (II), Washington County (1960-1960).

ENGLEBRECHT, PATRICIA, M.S.
Extension Home Economics Agent (I), Broward County (1974-1974).

ESTES, JAMES BARRY, M.Ag.
County Extension Director (III), Franklin County (1958-1969).

EUBANKS, LARRY E., M.S.
Extension Agent-4-H (I), Alachua County (1976-1976).

FARRELL, ELVA L., B.S.
Extension Agent-4-H Coordinator (I), Sarasota County (1976-1976).

FINK, WILLARD, M.A.
County Extension Director (I), Union County (1975-1975).

FISHER, JEFFREY A., M.S.
Extension Agent (I), Map, Multi-County, Bay County (1975-1975).

FLEMING, HELEN H., M.S.
Extension Agent (II), Home Economics, Hernando County (1975-1975).

FLOYD, LESTER C., B.S.
Extension Agent 4-H (II), Orange County (1972-1976).

FOWLER, RUTH ANN, M.S.
Extension Home Economics Agent (III), Hillsborough County (1975-1975).

FULLER, ALBERT E., B.S.
Extension Agent (I), 4-H, Jefferson County (1977-1977).

FULMER, ELIZABETH H., M.A.
Extension Agent (I), 4-H, Manatee County (1975-1975).

FULMER, JUDSON TODD, M.Ed.
*County Extension Director (II), Nassau County (1957-1966).**

GARDNER, VIRGINIA DICKENS, B.S.H.E.
Extension Home Economics Agent (III), Pinellas County (1951-1970).

GARY, LOCHRANE A., M.S.
Extension Agent (III), Livestock, Sarasota County (1977-1977).

GAVER, TIMOTHY PATRICK, B.S.
Extension Agent-Multi County, Citrus (I), St. Lucie County (1972-1972).

GEORGE, DONALD ATKINSON, B.S.A.
County Extension Director (II), Sumter County (1954-1969).

GEYER, KLAUS, B.S.
Extension Agent-Horticulture (I), Pinellas County (1975-1975).

GIFFORD, DOROTHY YOUNG, B.S.
Extension Home Economics Agent (II), Broward County (1962-1967).

GLASSCOCK, PAUL EDWIN, B.S.
Extension Agent—Dairying (II), Hillsborough County (1957-1969).

GLEASON, RICHARD, B.S.
Extension Agent-Ornamental Horticulture (I), Charlotte County (1975-1975).

GODBOLD, THOMAS JESSE, B.S.A.
County Extension Director (II), Clay County (1963-1969).

GOLDWEBER, SEYMOUR, B.S.
Extension Agent—Fruit Crops Multi-County (III) (1960-1969).

GRANT, HENRY G., M.S.
Extension Agent (II), F.A.M.U., Gadsden County (1973-1973).

GRIFFIS, RALEIGH SIDNEY, M.Ag.
Extension Agent (III), Vegetables and Flowers, Palm Beach County (1949-1970).

GRIGGS, MAX E., M.Ag.
Extension Agent-Soils & Agronomy (I), Escambia County (1976-1976).

HADDOX, JACKSON ALEXANDER, M.Ag.
County Extension Director (III), Lake County (1951-1969).

HALSEY, LARRY A., M.S.
County Extension Director (II), Jefferson County (1976-1976).

HALUSKY, JOSEPH G., M.S. (Florida State University)
Extension Agent (II), Map, St. Johns County (1976-1977).

HALUSKY, MARILYN J., B.S.
Extension Home Economics Agent (II), Wakulla County (1969-1973).

HARPER, EMILY G., B.S.
Extension Home Economics Agent (II), Clay County (1966-1972).

HARRELL, AUBREY LUTHER, M.Ag.
County Extension Director (II), Baker County (1950-1952).

HARRINGTON, BEVERLY B., B.S.
Extension Home Economics Agent 4-H (I), Palm Beach County (1973-1973).

HAUSER, GRACE ROBERTS, B.S.
Extension Agent-Home Economics (II), Dade County (1970-1976).

HAYMAN, JACK CARLTON, M.Ag.
County Extension Director (III), Hardee County (1953-1969).

HEBERT, OSCAR JOSEPH, JR., M.S.
Extension Agent—Livestock, Multi-County (III) (1967-1969).

HEDGE, SUSAN L., M.S.
Extension Agent-Home Economics (I), Lee County (1976-1976).

HEITMEYER, LAWRENCE ALAN, M.S.
Extension Agent (II), 4-H, Leon County (1973-1973).

HENRY, GEORGE COLBERT, JR., M.Ed.
Extension Agent (I), Leon County (1972-1972).

HINDRY, GEORGE ANTHONY, Ph.D.
County Extension Director (II), DeSoto County (1972-1972).

HINTON, III, CHARLES FRANKLIN, Ph.D.
Extension (Poultry) Multi-County (II), Hillsborough County (1972-1972).

HODGES, SHARON P., B.S.
Extension Agent-4-H (I), Hillsborough County (1976-1976).

HOLMES, MARY ALYCE, M.S.
Extension Home Economics Agent (II), Dade County (1966-1966).

HORNICK, CECILY L., B.S.
Extension Agent-4-H (I), Volusia County (1976-1976).

HULL, DEARMAND L.R., M.S.
Extension Agent, Ornamentals (I), Palm Beach County (1971-1971).

HUMPHRYS, BROOKS, M.S.
Extension Agent (Citrus) (II), Multi-County (1974-1974).

HURNER, GEORGE TIMOTHY, JR., M.S.
County Extension Director (II), Highlands County (1965-1965).

HUTCHESON, CLAYTON ELBERT, M.S.
County Extension Director (III), Palm Beach County (1970-1976).

IVERSON, MARLOWE KEITH, M.S.
Extension Agent (I), Horticulture & 4-H Manatee County (1974).

JACKSON, ELIZA MOXLEY, B.S.H.E.
Extension Home Economics Agent (II), Bay County (1962-1962).

JACKSON, JOHN LESLIE, JR., M.Ag.
Extension Agent (II), Citrus, Multi-County (1968-1971).

JASA, FRANK JSOEPH, B.S.A.
County Extension Director (II), Seminole (1957-1969).

JENKINS, GAYLE MASON, M.A.
Extension Home Economics Agent (I), Polk County (1974-1974).

JENSEN, NAN, M.S.
Extension Home Economics Agent (I), Pinellas County (1975-1975).

JETER, ANN PIERCE, B.S.
Extension Home Economics Agent (III), Okaloosa County (1956-1969).

JOHNSON, SANDRA RAY, B.S.
Extension Home Economics Agent (II), Nassau County (1965-1969).

JONES, ARLEN CUNNINGHAM, B.S.H.E.
Extension Home Economics Agent (III), Palm Beach County (1963-1970).

JONES, DELORIS MAE, B.S.
Extension Home Economics Agent (II), Madison County (1960-1969).

JONES, HAROLD CHARLES, M.A.
Extension Agent (Ornamentals) (II), Duval County (1971-1971).

JONES, JANE, B.S.
Extension Home Economics Agent (II), Bay County (1975-1975).

JOWERS, HENRY EDGAR, M.S.
Extension Agent 4-H & Agriculture (II), Suwannee County (1971-1971).

KELLY, MICHAEL G., M.S.
Extension Agent, Dairy-Multi-County (I), Duval County (1976-1976).

KERSEY, ALICE P., M.S.
Extension Agent- 4-H (III), Polk County (1967-1976).

KLATT, ELAINE THERESE, M.S.
Extension Home Economics Agent (I), ENP, Broward County (1974-1974).

LAIRD, CUBIE REVONIE, M.Ed.
County Extension Director (III), Gulf County (1945-1969).

LANDER, DONALD WILSON, M.A.
County Extension Director (IV), Collier County (1950-1970).

LAWLOR, FRANK J., M.S. (Texas A & M University)
Extension Agent (I), Map, Palm Beach County (1976-1976).

LAWRENCE, LARRY A., M.S.
Extension Agent (I), 4-H, Holmes County (1976-1976).

LEVY, MARGARET MCLENDON, B.S.
Extension Home Economics Agent (I), 4-H, Santa Rosa County (1974-1974).

LINKER, MICHAEL, M.A.
Extension Agent-Pest Management (I), Jackson County (1975-1975).

LISTER, OPAL, B.S.
Extension Home Economics Agent (I), Escambia County (1975-1975).

LLEWELLYN, WILLIAM R., M.S.A.
Extension Agent (II), Broward County (1973-1973).

LOADHOLTZ, JOSEPH LOWELL, M.A.
County Extension Director (IV), Brevard County (1961-1971).

LOADHOLTZ, LARRY LEWIS, M.S.
County Extension Director (III), Volusia County (1961-1970).

LOWERY, CHARLIE AVERY, M.S.
Extension Agent (I), 4-H-Ornamentals, Collier County (1974-1974).

LUMAN, LINDA W., B.S.
Extension Agent Home Economics-4-H (II), Orange County (1968-1972).

MACCUBBIN, THOMAS J., M.S.
Extension Agent Horticulture (III), Orange County (1972-1976).

MARSHALL, DAVID W., M.S.
Extension Agent-Ornamental (I), Leon County (1976-1976).

MARTIN, JULIANN STOUGH, B.S.
Extension Home Economics Agent (I), ENP 4-H, Polk County (1974-1974).

MASTERYANNI, JANITH, M.S.
Extension Home Economics Agent (III), Dade County (1974-1974).

MCCALL, JAMES C., M.S.
County Extension Director (III), St. Lucie County (1961-1976).

MCCOY, SANDRA LEE, B.S.
Extension Home Economics Agent (I), ENP Duval County (1973-1973).

MCDANIEL, MILTON C., M.S.
Extension Agent (I), Livestock, Volusia County (1977-1977).

MCDERMOTT, DOUGLAS S., M.S.
Extension Agent- 4-H Coordinator (I), Hillsborough County (1976-1976).

MCGUIRE, JOHN FRANCIS, M.S.
Extension Agent (II), Marketing, Dade County (1974-1974).

MEADOWS, JEANNETTE, M.S.
Extension Home Economics Agent (III), Sarasota County (1965-1976).

MILLER, ELSIE T., M.S.
Extension Agent Home Economics Program Leader (I), Jefferson County (1976-1976).

MILLER, JANICE G., M.S.
Extension Agent (II), Home Economics, Lake County (1977-1977).

MILLER, RUTH ANN, B.S.
Extension Home Economics Agent (III), Polk County (1969-1973).

MONTGOMERY, ROBERT TERRANCE, M.S.
Extension Agent- 4-H (II), Manatee County (1968-1976).

MOORE, MARY ALLEN, M.A.T.
Extension Home Economics Agent (III), Orange County (1954-1969).

MOORE, RALPH WILLIAM, B.S.
Extension Agent—Communications & 4-H (II), Dade County (1967-1969).

MORRIS, JAMES B., III, M.S.A.
County Extension Director (II), Lafayette County (1970-1973).

MOTT, CAROLE ELAINE BAILEY, B.S.
Extension Home Economics Agent (I), Taylor County (1973-1973).

MULLINS, VICKI, M.S.
Extension Agent-Home Economics (I), ENP 4-H, Escambia County (1971-1973).

MURARO, RONALD PETER, M.S.
Extension Agent (Farm Management) (II), Polk County (1971-1971).

NEWBURY, GEORGE H., M.S.
County Extension Director (II), Flagler County (1970-1973).

NEWTON, ROGER DALE, M.S.
Extension Agent-Ornamental Horticulture (III), Hillsborough County (1972-1976).

NIX, FERN SULPHIN, M.S.H.E.
Extension Agent-Home Economics (III), Santa Rosa County (1954-1976).

NORTON, MARTHA BURDINE, M.S.H.E.
Extension Home Economics Agent (II), Martin County (1952-1956).

O'NEAL, JANICE H., B.S.
Extension Agent Home Economics (I), Clay County (1974-1974).

OSWALT, THOMAS W., M.S.
Extension Agent-Citrus (III), Polk County (1963-1969).

PARRAMORE, ANN W., M.S.
Extension Agent Home Economics Program Leader (II), Leon County (1967-1972).

PARRISH, JAMES LOWELL, B.S.A.
Extension Agent 4-H (II), Bradford County (1972-1972).

PATTEN, JACK DOWELL, B.S.A.
County Extension Director (III), Okaloosa County (1955-1969).

PAULK, HARVY T., M.Ag.
County Extension Director (IV), Leon County (1969-1972).

PENNER, RUTH TAYLOR, B.S.
Extension Home Economics Agent (II), Hillsborough County (1970-1970).

PHILLIPS, WILLIAM JOSEPH, JR., M.S.
Extension Agent (Horticulture) (III), Multi-County (1967-1969).

POOLE, LOUISE L., B.S.H.E.
Extension Home Economics Agent (II), Seminole County (1968-1969).

POSPICHAL, MARION THOMAS, M.S.
Extension Agent-Vegetables (I), Hillsborough County (1976-1976).

PRICE, RAYBURN KENNETH, M.Ag.
County Extension Director (IV), Okeechobee County (1952-1976).

RENNER, ROBERT LEWIS, JR., M.A.
Extension Agent (I), 4-H Marion County (1973-1973).

RICHARDS, JAMES EDWARD, M.S.A.
Extension Agent (Citrus) (III), Hillsborough County (1969-1970).

ROBERTSON, EDWENA JEANETTE, B.S.H.E.
Extension Home Economics Agent (III), Escambia County (1954-1969).

ROE, MARY ANN, B.S.
Extension Home Economics Agent (II), Desoto County (1967-1967).

ROGERS, MARGARET G., M.S.
Extension Agent (I), 4-H, Charlotte County (1977-1977).

ROSE, SYLVESTER A., M.S.
Extension Agent - Ornamentals (IV), Brevard County (1956-1973).

ROWAN, CHARLES EDISON, M.Ag.
*Extension Agent Livestock-4-H (II), Lake County (1954-1969).**

ROWAN, EDSEL WRIGHT, B.S.A.
County Extension Director (III), Marion County (1950-1969).

ROZAR, LUTHER LYNSON, M.Ag.
County Extension Director (III), Sarasota County (1958-1969).

RUBIO, MIGUEL E., B.S.
Extension Agent (I), Livestock, Highlands County (1977-1977).

RUSSELL, JOHN COLEMAN, M.Ag.
County Extension Director (IV), Gadsden County (1952-1970).

RYAN, STEPHEN O., Ph.D.
County Extension Director (II), Dade County (1976-1976).

SATCHER, JOY WREN, M.S.
Extension Home Economics Agent (III), Brevard County (1966-1971).

SCHRADER, DAN EDWARD, M.S.
Extension County Agent (I), Polk County (1974-1974).

SCHULTZ, WILMAR A., M.S.
Extension Agent (I), Livestock, Alachua County (1977-1977).

SCOTT, LENZY MAURICE, M.Ag.
Extension Agent—Beef Cattle Multi-County (II), (1955-1969).

SEAWRIGHT, TRAVIS, B.S.
Extension Agent—Livestock (I), Manatee County (1975-1975).

SHAW, SUSAN KAY, B.S.
Extension Home Economics Agent (I), Manatee County (1974-1974).

SHIRAR, MARYLOU WAYMIRE, M.S.
Extension Home Economics Agent—4-H (III), Palm Beach County (1959-1970).

SHOOK, ELAINE, M.S.
Extension Home Economics Agent (I), Leon County (1975-1975).

SHULER, KENNETH D., M.S.
Extension Agent—Vegetables & General Agriculture (I), Palm Beach County (1976-1976).

SISTRUNK, LAURENCE ALLEN, M.S.
Extension Agent—Horticulture (I), Lake County (1973-1973).

SMITH, CLARA ANN, B.S.
Extension Home Economics Agent (II), Pasco County (1963-1963).

SMITH, JAMES BLANCHARD, B.S.A.
County Extension Director (III), Osceola County (1950-1969).

SMITH, PATRICIA ANN, M.S.
Extension Home Economics Agent (I), Charlotte County (1974-1974).

SMITH, WILLIAM CARLTON, Ph.D.
County Extension Director (III), Suwannee County (1957-1973).

SOMERS, MARY B., B.S.
Extension Home Economics Agent (I), Hillsborough County (1974-1974).

SPEARS, JACK JAMES, M.S.
Extension Agent—Agriculture (III), Santa Rosa County (1965-1976).

SPELBRING, MARK C., M.S.
Extension Agent—Livestock (I), Pasco County (1976-1976).

SPYKE, PETER D., M.S.
Extension Agent (II), Citrus, Indian River County (1977-1977).

STALL, WILLIAM D., Ph.D.
Extension Agent (II), Vegetables, Dade County (1974-1974).

STANLEY, PAULA PARIS, B.S.
Extension Home Economics Agent (II), Citrus County (1964-1964).

STEPHENS, CLAUDETTE L., B.S.
Extension Agent (I), 4-H ENP, Palm Beach County (1977-1977).

STEPHENS, ERNEST LEE, M.S.A.
Extension Agent 4-H (II), Duval County (1972-1972).

SUMMER, SIDNEY LANIER, M.S.
Extension Agent—Beef Cattle (III), Polk County (1965-1969).

SWANSON, HENRY FREDERICK, M.S.A.
County Extension Director (IV), Orange County (1948-1969).

SWEAT, DONALD E., M.S.
Extension Agent—Map Multi-County (I), Pinellas County (1976-1976).

TAVSS, MARGO G., B.S.
Extension Agent (I), 4-H, Broward County (1973-1973).

TAYLOR, BOBBY LEE, M.Ag.
County Extension Director (II), Bradford County (1963-1971).

TAYLOR, DORIS, M.S.
Extension Home Economics Agent (II), Lake County (1973-1973).

TAYLOR, LAWRENCE DENNIS, M.Ag.
County Extension Director (II), Holmes County (1954-1958).

TAYLOR, MEREDITH C., M.S.
Extension Home Economics Agent (II), Suwannee County (1969-1975).

THOMAS, JACQUELINE B., M.S.
Extension Agent Home Economics Program Leader (I), Baker County (1976-1976).

THOMAS, SARAH KYLER, B.S.
Extension Home Economics Agent (II), Marion County (1954-1969).

THOMAS, WILLIAM D., M.S.
Extension Agent (I), Livestock, Columbia County (1977-1977).

THOMASTON, JAMES EDSEL, M.Ag.
County Extension Director (III), Walton County (1954-1969).

THOMPSON, ESSIE HOGAN, B.S.H.E.
Extension Home Economics Agent (II), Putnam County (1961-1963).

TILESTON, MARILYN DIETRICH, B.S.
*Extension Home Economics Agent (II), Osceola County (1956-1956).**

TOOMES, ZANITH L., M.S.
Extension Agent (I), 4-H ENP, Dade County (1977-1977).

TOWNSEND, DALLAS B., M.S.
Extension Agent (II), 4-H & Livestock, Collier County (1965-1968).

TOWNSEND, JO M., B.S.
Extension Agent—Home Economics Program Leader (II), Brevard County (1972-1977).

VERNON, BETTY MARTIN, B.S.H.E.
Extension Home Economics Agent (II), Volusia County (1969-1969).

WADE, GARY LEE, M.S.
Extension Agent—Citrus (I), Multi-County (1976-1976).

WADE, WAYNE THEODORE, M.Ed.
Extension Agent—Beef (II), Hillsborough County (1961-1969).

WAKEFIELD, JUDITH, M.S.
County Extension Director (II), Indian River County (1975-1975).

WALTHALL, CHARLES MIDDLETON, M.S.
Extension Agent (III), Beef Cattle, Multi-County (1966-1969).

WARNER, RICHARD E., Ph.D.
Extension Agent (II), Monroe County (1974-1974).

WASHINGTON, MARTHA MARIE, B.S.
Extension Home Economics Agent (I), Leon County (1970-1970).

WATSON, LEWIS ELBYRNE, M.Ag.
County Extension Director (IV), Broward County (1955-1971).

WEATHERS, BRENDA JO, M.S.
Extension Agent Home Economics Program Leader (I), Holmes County (1976-1976).

WEAVER, MARVIN FRANKLIN, M.S.
Extension Agent 4-H (I), Escambia County (1972-1972).

WEBB, HELEN P., B.S.
Extension Agent (II), Hillsborough County (1963-1966).

WEBER, JOHN B., M.Ed.
Extension Agent—4-H (I), Hernando County (1976-1976). (1963-1969).

WHIGHAM, NANCY BRIGHTMAN, B.S.H.E.
Extension Home Economics Agent (II), Pinellas County (1962-1962).

WHITE, WYLMA BLODGET, M.S.H.E.
Extension Home Economics Agent (II), Hamilton County (1955-1955).

WHITTON, GILBERT MARSHALL, M.Ag.
County Extension Director (IV), Pinellas County (1957-1969).

WHITTY, ROBERT BEZELLE, B.S.A.
County Extension Director—Horticulturist (II), Martin County (1965-1970).

WILKINS, DELORIS H., M.S.
Extension Agent (II), Home Economics, Orange County (1977-1977).

WILLIAMS, MARJORIE LUDEMAN, B.S.H.E.
Extension Home Economics Agent (III), Orange County (1952-1969).

WILLIAMS, URSULA HICKS, B.S.
Extension Home Economics Agent (II), Gadsden County (1951-1969).

WYRICK, JERRY ALLEN, M.S.
Extension Agent—4-H (II), Calhoun County (1967-1970).

YATES, DIANE ELIZABETH, B.S.
Extension Home Economics Agent (I), Volusia County, (1971-1971).

YEARTA, MARY S., M.S.
Extension Agent (I), Home Economics, Bradford County (1977-1977).

YELVINGTON, JAMES RUSSELL, M.Ag.
County Extension Director (III), Calhoun County (1973-1973).

YINGST, VICTOR W., B.S.
Extension Agent—Horticulture (I), Lee County (1976-1976).

YOUNG, BECKY EPPERLY, B.S.
Extension Home Economics Agent (I), 4-H, Walton County (1974-1974).

YOUNGER, WILLIAM R., M.S.
Extension Agent (I), MAP, Manatee County (1977-1977).

ZABOR, MARCIA L., B.S.
Extension Agent Home Economics (I), Marion County (1976-1976).

ZORN, WILLIAM C., M.Ag.
County Extension Director (III), Santa Rosa County (1949-1973).

MEMBERS OF THE FACULTY WHO RETIRED SINCE 1960 AND THOSE WITH EMERITUS STATUS

ADAMS, FRANK THOMPSON, Ed.D. (University of Florida)
Dean for Student Development, Emeritus (1973).

AHRANO, ELIZABETH CERMAK
Extension Home Economics Agent (I), IFAS, County Work (1972)

AHRENS, MAURICE RUSSELL, Ed.D.
Professor Emeritus of Materials Science and Engineering (1973).

ALBRECHT, RUTH E., Ph.D. (University of Chicago)
Professor Emeritus of Sociology (1975).

ALLEGER, DANIEL EUGENE, M.S. ((Pennsylvania State University)
Associate Professor Emeritus, Food and Resource Economics Department, IFAS (1973).

ALLEN, VIRGINIA FRICK, M.Ed.
Instructor, P. K. Yonge Laboratory School (1975).

ALLISON, ROBERT VERRILL, Ph.D. (Rutgers University)
Fiber Technologist Emeritus, Everglades Experimental Station (1965).

ALSTON, CLIFFORD, M.S.A.
Professor Emeritus of Agricultural Economics (1971).

ANDERSON, MONTGOMERY D., Ph.D. (Brookings)
Professor Emeritus of Economics (1971).

APPERSON, FRANCES EUGENIA, B.A. in L.S.
Librarian and Chairperson of Documents Department (1975).

ARNETT, WILLIAM TOBIAS, M.A.Arch.
Professor of Architecture; Dean Emeritus, College of Architecture and Fine Arts (1974).

ARNOLD, LUTHER A., Ed.D.
Associate Professor Emeritus of Education (1973).

ARNOLD, P. T., M.S.A.
Associate Professor Emeritus, RFUF (1959).

AIKINS, CEDRIC DONALD
Professor, IFAS, AREC, Lake Alfred (1972).

AUSTIN, OLIVER LUTHER, JR., Ph.D. (Harvard University)
Curator Emeritus of Ornithology, Florida State Museum (1973).

BACHMAN, HAROLD BURTON, B.S.
Professor Emeritus of Music (1961).

BAKER, MELVIN CHARLES, Ed.D. (University of Illinois)
Professor of Education and Assistant Dean, College of Education (1977).

BANNISTER, TURPIN CHAMBERS, Ph.D. (Harvard University)
D.F.A. (Denison University)
Professor of Architecture and Dean Emeritus of the College of Architecture and Fine Arts.

BANTLEON, GEORGE F., M.D. (University of Rochester)
University Physician (1977).

BARRON, DONALD H., Ph.D. (Yale University)
Professor of Obstetrics and Gynecology (1975).

BASSETT, MAMIE G., B.S.H.E. (Univ. of Tennessee)
Extension Agent (III) (1975).

BAUGHAN, DENVER EWING, Ph.D. (Yale University)
Professor Emeritus of English (1967).

BAULT, ROGER QUINCY, M.A.
Assistant Professor Emeritus of Physical Science, RFUF (1966).

BEARD, PERCY M.
Associate Professor Emeritus, RFUF.

BEATY, ROBERT C., M.A. (Vanderbilt)
Dean of Students, Emeritus (1960).

BEAUVAIS, JUNE T., B.A. ((Piedmont College)
Instructor (1973).

BECKENBACH, JOSEPH RILEY, Ph.D. (Rutgers University)
Director Emeritus of Agriculture Experiment Station (1967).

BECKER, RAYMOND BROWN, Ph.D. (University of Minnesota)
Professor Emeritus of Dairy Science; Dairy Husbandman Emeritus, Agriculture Experiment Station (1963).

BECKWITH, STEPHEN L., Ph.D. (University of Michigan)
Associate Professor Emeritus, IFAS, School of Forest Resources and Conservation, Agricultural Experiment Station (1971).

BENNETT, S. FLEMING, B.S.L.S.
Assistant Director of Libraries (1976).

BINGHAM, N. ELDRED, Ph.D. (Columbia University)
Professor Emeritus of Education (1971).

BLACK, ALVIN PERCY, Ph.D. (University of Iowa)
Research Professor Emeritus of Chemistry and Professor Emeritus of Environmental Engineering Sciences (1966).

BLACKMON, GULIE H., M.S.A.
Horticulturist Emeritus, Agricultural Experiment Station (1954).

BLAKE, ROBERT GEORGE, Ph.D. (University of Florida)
Associate Professor of Mathematics (1976).

BLALOCK, LEWIS F.
Director of Admissions Emeritus (1966).

BLANTON, FRANKLIN S., Ph.D. (Cornell University)
Professor Emeritus of Entomology (1974).

BLEDSOE, SUE B., B.S. (W Kentucky State Univ.)
Extension Agent III (1976).

BLOCK, HERMAN H., C.E.
Professor Emeritus of Building Construction and Chairman of the Department (1963).

BLODGETT, RALPH HAMILTON, Ph.D. (University of Pennsylvania)
Professor Emeritus of Economics (1976).

BLOODWORTH, THOMAS H., M.A. (University of Florida)
Associate Director of Personnel (1977).

BOURKE, NORMAN, M.E.
Professor Emeritus of Mechanical Engineering (1960).

BOWERS, ROBERT HOOD, JR., Ph.D. (Yale University)
Professor of English and Curator of Rare Books (1975).

BOYD, FREDERICK TILGHMAN, Ph.D. (University of Wisconsin)
Professor Emeritus (Agronomist), IFAS (1974).

BRADBURY, ROBERT WESLEY, Ph.D. (University of Michigan)
Professor Emeritus of Economics (1975).

BRADLEY, RICHARD L., B.S.A.
Extension Agent (I), Sumter County (1974).

BRADSHAW, JAMES P., M.A., M.S.
Associate Professor of English (1977).

BRADY, MARNA V., Ed.D. (Columbia University)
Professor Emeritus of Comprehensive Logic (1971).

BRANCH, JOHN T., JR., M.B.A. (Southern Methodist University)
Coordinator, Department of Extended Services, Division of Continuing Education (1977).

BRINKLEY, HARRY J.
County Agent Emeritus, RFUF.

BRISTOL, LORIS R., M.A. (University of Florida)
Assistant Professor Emeritus in Counseling Education (1969).

BRISTOR, JOHN D., M.S.
Professor Emeritus of Building Construction (1973).

BROOKER, MARVIN A., Ph.D. (Cornell University)
Professor and Dean Emeritus, IFAS (1971).

BROWN, WOODROW W., M.Ag. (University of Florida)
Professor Emeritus, IFAS, Cooperative Extension Service (1972).

BUNTING, DONALD CHARLES, M.S.
Associate Professor of Physical Sciences (1975).

BURDINE, HOWARD WILLIAM, Ph.D. (Cornell University)
Professor (Soils Chemist), IFAS Agricultural Research and Education Center, Belle Glade (1976).

BUSBY, JOE NEIL, Ph.D. (University of Florida)
Professor, Dean for Cooperative Extension Services, IFAS (1976).

CAKE, EDWIN W., Ph.D. (Cornell University)
Professor Emeritus, IFAS, Agricultural Experiment Station, Food and Resource Economics (1972).

CALDWELL, WOFFORD T., M.S.E.D.
Associate Professor Emeritus of Building Construction (1971).

CAMP, ARTHUR F., Ph.D. (Washington University)
Vice Director Emeritus, Citrus Experimental Station (1956).

CAMP, SUSAN C., M.S. (Columbia University)
Associate Professor Emeritus, IFAS, Florida Cooperative Extension Service (1971).

CAMPBELL, JOHN D., B.S.A.
County Extension Director (III), Dade County (1975).

CARLETON, WILLIAM G., J.D., M.A.
Professor Emeritus of History and Political Science (1961).

CARLSON, EARL C., M.A. (Boston University)
Associate Professor (1974).

CARROLL, WILLIAM R., Ph.D. (University of Minnesota)
Professor Emeritus of Bacteriology (1966).

CARSON, MARION C., M.B.A. (University of Florida)
Assistant Professor, RFUF.

CARVER, WILLIAM A., Ph.D. (State University of Iowa)
Professor Emeritus of Agronomy, IFAS (1964).

CAUSEY, JOHN HJALMAR, B.S.A.
Extension Agent, Vegetables & Sugar Cane (III), Palm Beach County (1977).

CHRISTIE, JESSE R., Ph.D. (George Washington)
Nematologist Emeritus, Agricultural Experiment Station (1960).

CLARK, FRED, M.S.A. (University of Florida)
Professor of Agronomy, IFAS (1976).

CLARK, VERNON W., M.A. (New York University)
Professor Emeritus of Law (1974).

CLARK, VERNON WILMOT, J.D.
Professor of Law (1974).

CLUFF, LEIGHTON E., M.D. (George Washington University)
Professor, Department of Medicine (1976).

COLE, MOSES MCWILLIE, B.S. (Mississippi State University)
Assistant Professor (Assistant Entomologist), IFAS (1975).

COMBS, ARTHUR, WRIGHT, Ph.D. (Ohio State University)
Professor Emeritus in Education (1976).

CONNER, FREDERICK W.
Vice President for Academic Affairs, Academic Affairs (1971).

CONSTANS, HENRY P., LL.B., M.A. (University of Iowa)
Professor Emeritus of Speech (1965).

COOPER, ALICY JOYCE, Ed.D. (Columbia University)
Professor Emeritus of Education (1974).

COOPER, JOHN F., M.S.A.
Professor Emeritus, Agricultural Extension Service (1961).

COOPERRIDER, DONALD ELMER, D.V.N., M.S.C. (Ohio State University)
Professor (Parasitologist), College of Veterinary Medicine, IFAS, Florida Department of Agriculture, (1976).

COWEN, WILLIAM JOSHUA, B.S.A.
County Extension Director (III), Union County (1976).

COX, E. H., Ph.D. (University of North Carolina)
Professor Emeritus, English, Arts & Sciences (1972).

CREIGHTON, JOHN THOMAS, Ph.D. (Ohio State University)
Professor Emeritus of Entomology (1969).

CRIST, RAYMOND E., Docteur Es Lettres (Grenoble, France)
Research Professor Emeritus of Geography (1975).

CROUGH, HELEN JOHNSON, M.A.
Assistant Professor, P. K. Yonge Laboratory School (1975).

CUMBEE, CARROLL F., SR., M.A.E. (University of Chicago)
Associate Professor Emeritus of Education (1969).

CUNHA, TONY JOSEPH, Ph.D. (University of Wisconsin)
Distinguished Service Professor Emeritus (Animal Nutritionist) and Chairperson of Animal Science Department, IFAS, (1975).

CUNNINGHAM, MYRON ARTHUR, Ed.D. (Northwestern University)
Professor Emeritus of Education (1975).

CUTLER, RONALD JOHN, Ed.D. (Columbia University)
Associate Professor of English (1974).

DANBURG, RUSSELL LAVERNE, M.M.
Professor of Music (1977).

DANIS, ANTHONY L., M.S. (Harvard University)
Professor Emeritus of Environmental Engineering Sciences (1967).

DAVAULT, JAMES W., Ph.D. (Columbia)
Professor Emeritus of Business Administration (1970).

DAVIDSON, ROBERT F., Ph.D. (Yale University)
Professor Emeritus of Humanities (1962).

DAVIS, JOHN H., Ph.D. (University of Chicago)
Professor Emeritus of Botany, IFAS (1969).

DAWSEY, POSTELLE GILPIN
County Extension Home Economics Agent (III), Institute of Food and Agricultural Sciences, Florida Agricultural Extension Service, County (1972).

DECKER, PHARES, Ph.D. (Cornell University)
Professor Emeritus (Plant Pathologist), IFAS (1976).

DEINZER, HARVEY T., J.D., Ph.D. (University of Michigan)
Professor Emeritus of Accounting (1973).

DEKLE, GEORGE W., B.S.A. (University of Florida)
Associate Professor (1976).

DICKENSON, CARRIE E., M.S.
Professor Emeritus, IFAS (1969).

DICKENSON, ELIZABETH, M.A. (Univ. of Tennessee)
Professor Emeritus, RFUF (1969).

DICKEY, RALPH DAVIS, M.S.A. (Cornell University)
Professor Emeritus (1973).

DIXON, BARMELL BLEDSOE, B.S.H.E.
Extension Home Economics Agent (II), Pasco County (1976).

DONOVAN, CLEMENT HAROLD, Ph.D. (Univ. of N. Carolina)
Professor Emeritus of Economics (1977).

DOTY, FRANKLIN A., Ph.D. (University of Iowa)
Professor of History and Social Sciences and Dean Emeritus of University College (1971).

DRAGSTEDT, LESTER R., Ph.D. (Rush Medical College)
Research Professor Emeritus of Surgery and Professor Emeritus of Physiology (1973).

DURELL, PHYLLIS B.
Assistant to the President (1977).

DURRANCE, CHARLES L., Ed.D. (Columbia Univ.)
Professor Emeritus of Education (1975).

DURRE, NOLAN L., M.S.
Extension Agent (III), Vegetables, Dade County (1974).

EATON, ELIZABETH S., M.A.
University Librarian Emeritus, Health Center Library and Professor of Clinical Pharmacy (1975).

EBAUGH, NEWTON C.
Chairperson and Professor Emeritus, RFUF (1950).

EBY, EDNA S.
Extension Home Economics Agent (III), Volusia County, IFAS, Florida Cooperative Extension Service, County Work (1971).

EDEN, WILLIAM GIBBS, Ph.D. (University of Illinois)
Professor Emeritus (Entomologist) and Chairperson, Entomology Department, IFAS (1975).

EDSON, SETON N., M.S. (University of Florida)
Associate Professor of Soils (1970).

EDWARDS, RICHARD A., Ph.D. (UNC-Chapel Hill)
Professor Emeritus of Geology (1974).

EGGERT, CHESTER LEE, Ed.D. (University of Indiana)
Professor Emeritus of Education (1975).

ELKINS, RUTH MCKEOWN
Extension Home Economics Agent (III), Polk County, IFAS, Florida Cooperative Extension Service, County Work (1972).

ENWALL, HAYFORD OCTAVIUS, J.D. (Univ. of Florida)
Professor Emeritus of Law (1976).

EUTSLER, ROLAND B., Ph.D. (University of Pennsylvania)
Professor Emeritus of Economics, Business Administration (1970).

FAIN, JOHN TYREE, Ph.D. (Vanderbilt University)
Professor Emeritus of English (1975).

FAIRCHILD, ALEXANDER GRAHAM BELL, Ph.D. (Harvard University)
Professor (Entomologist) (1976).

FAIRING, ROBERT LEWIS
Associate Dean and Associate Professor, Division of Continuing Education (1972).

FENN, HENRY A., LL.B. (Yale University)
Dean Emeritus and Professor, Law (1959).

FERNANDEZ, PEDRO VILLA, M.A.
Professor Emeritus of Spanish (1966).

FIFIELD, WILLARD M., M.S.
Provost Emeritus for Agriculture (1962).

FLANIGAN, FRANK M., M.S., M.E.
Professor Emeritus of Mechanical Engineering (1970.)

FOOTE, PERRY A., Ph.D. (University of Wisconsin)
Dean Emeritus of the College of Pharmacy and Professor of Pharmaceutical Chemistry (1967).

FORD, ERNEST S., Ph.D. (University of Chicago)
Professor Emeritus of Botany (1971).

FORSEE, WILLIAM T., Ph.D. (University of Florida)
Chemist Emeritus and Head Everglades Experimental Station (1968).

FORSMAN, MARION E., Ph.D. (Iowa State University)
Professor Emeritus of Electrical Engineering (1974).

FOSTER, CHARLES R., Ed.D. (Harvard University)
Professor Emeritus of Education (1966).

FOUTS, EVERETT L., Ph.D. (State University of Iowa)
Professor of Dairy Science and Dairy Technologist Emeritus, IFAS (1970).

FOX, LAURETTA E., Ph.D. (University of Illinois)
Associate Professor of Pharmacology and Therapeutics (1975).

FRAZER, PERCY W., M.S. (Yale University)
Associate Professor (1975).

FRENCH, ROWLAND B., Ph.D. (University of Iowa)
Biochemist Emeritus, Agricultural Experiment Station (1967).

GAGER, WILLIAM ARKINS, Ph.D. (Peabody College)
Professor Emeritus of Mathematics (1968).

GAHAN, JAMES B., M.S.
Professor of Entomology and Administrative Officer, USDA, Entomology Research Laboratory (1970).

GAINES, CAROLYN J., M.S. (Florida State University)
Associate University Librarian (1976).

GARRIS, EDWARD W., Ph.D. (Peabody University)
Head and Professor Emeritus, RFUF (1962).

GEHAN, FREDERICK EDWARD, M.A.E.
Associate Professor of English (1977).

GELTZ, CHARLES G., M.S.F. (Univ. of California)
Professor Emeritus, RFUF (1966).

GILBRAITH, KENNETH MARSHBURN, M.S.A.
Associate Professor, Food and Resource Economics Department, IFAS (1975).

GILCREAS, F. WELLINGTON, B.A. (Harvard University)
Professor Emeritus of Environmental Engineering Sciences (1968).

GLENN, WOODROW W., M.A. (University of Florida)
County Agent III (1975).

GODWIN, GRANT MURRAY, M.Ag.
Associate Professor (Associate State 4-H Club Agent), IFAS (1974).

GOIN, COLEMAN J., Ph.D. (University of Florida)
Professor Emeritus of Biological Sciences and Zoology (1971).

GOODWIN, FRANK, Ph.D. (University of Pennsylvania)
Professor Emeritus of Marketing (1965).

GOUCK, HARRY KYDD, M.S. (University of Massachusetts)
Associate Professor (Associate Entomologist), USDA, IFAS (1974).

GRAND, JOHN LOUIS ROCHON, M.A.
Professor Emeritus of Architecture (1975).

GREENE, ROBERT EDWARD LEE, Ph.D. (Cornell University)
Professor Emeritus, Food and Resource Economics Department, IFAS (1975).

GREENMAN, JOHN ROOSEVELT, J.D. (University of Florida)
Professor Emeritus, Food and Resource Economics Department, IFAS (1973).

GREGORY, MARJORIE BUTLER, B.S.H.E.
Extension Home Economics Agent (III), Gadsden County (1974).

GRIFFIN, ROBERT CUSHMAN, M.A.
Coordinator, Department of Extended Services, Division of Continuing Education (1977).

GRIFFITH, MILDRED, Ph.D. (University of California)
Professor Emeritus of Botany (1976).

GRIGSBY, SHAW EARL, Ph.D. (Cornell University)
Professor (Extension Program Specialist), IFAS (1975).

GRINTER, LINTON E., Ph.D. (University of Illinois)
Dean Emeritus and Professor (1973).

GROTH, JOHN H., Ph.D. (University of Washington)
Professor Emeritus of Humanities (1963).

HADLOCK, EDWIN H., Ph.D. (Cornell University)
Professor Emeritus, Arts & Sciences, Mathematics (1972).

HAINES, LEWIS FRANICS, Ph.D. (University of Michigan)
Professor Emeritus of Behavioral Studies and Humanities (1977).

HALE, LESTER L., Ph.D. (Louisiana State University)
Vice President for Student Affairs and Professor of Speech Emeritus (1973).

HAMILTON, HENRY G., Ph.D. (Cornell University)
Professor Emeritus of Agricultural Economics and Agricultural Economist Emeritus, Agricultural Experiment Station and Agricultural Extension Service (1965).

HAMRICK, OLIVER RUDOLPH, M.Ag.
County Extension Director (IV), Madison County (1977).

HANNA, PAUL L., Ph.D. (Stanford Univ.)
Professor Emeritus, RFUF (1972).

HARPER, VERNE L., Ph.D.
Professor Emeritus, Forestry (1972).

HARRIS, BERT J., JR., B.S.A. (University of Florida)
County Agent (III) (1975).

HARRIS, HENRY C., Ph.D. (Cornell University)
Professor Emeritus of Agronomy, IFAS (1969).

HARROWER, MOLLY, Ph.D. (Smith College)
Professor Emeritus of Clinical Psychology (1975).

HART, THOMAS ALONZO EDWARD, Ph.D. (University of Michigan)
Professor of Humanities (1972).

HARVEY, WILLIAM B., A.B. (University of Pittsburgh)
Director, University Press (1977).

HATCHER, WILLIAM, B.S.A. (University of Arkansas)
County Agent (III) (1975).

HAYES, FRANCIS C., Ph.D. (University of North Carolina)
Professor Emeritus of Spanish (1973).

HAYNIE, JOHN D., B.S.A.
Professor Emeritus of Entomology (1971).

HAYWARD, FREDERICK WARREN, Ph.D. (Cornell University)
Associate Professor (Associate Biochemist), IFAS, Agricultural Research and Educational Center, Lake Alfred (1975).

HEBERT, LEO P., Ph.D. (Louisiana State University)
Professor (1971).

HENDERSON, JOSEPH R., M.S.
Professor Emeritus (1969).

HESTER, JANICE P., B.S. (Univ. of Illinois)
Assistant University Librarian, RFUF.

HETRICK, LAWRENCE A., Ph.D. (Ohio State University)
Professor Emeritus, IFAS, Entomology and Nematology (1972).

HICKS, ROBERTA CHERRY, B.S.
Extension Home Economics Agent (II), Baker County (1974).

HINCKLEY, ELMER DUMOND, Ph.D. (University of Chicago)
Professor Emeritus of Psychology, Associate, University Counseling Center (1963).

HOLLINSHEAD, BYRON S., M.A., LL.D. (Grinnel University), L.H.D. (Miami University)
Professor of Humanities and Dean Emeritus of University College (1967).

HOLLIS, ROBERT P., B.S.
Assistant Professor Emeritus of Industrial and Systems Engineering (1968).

HORN, GRANVILLE CLIDE, Ph.D. (University of Florida)
Professor Emeritus (Ornamental Horticulturist), IFAS (1974).

HORNE, EDWARD PORTER, Ph.D. (University of Iowa)
Professor Emeritus of Psychology (1976).

HUEFF, GEORGE B., Ph.D. (University of Pennsylvania)
Professor Emeritus of Economics (1971).

HUNTER, GEORGE W., III, Ph.D. (University of Illinois)
Professor Emeritus of Microbiology (1967).

HUSA, WILLIAM J., Ph.D. (University of Iowa)
Head Professor Emeritus of Pharmacy (1961).

HUTCHERSON, WILLIAM R., Ph.D. (Cornell University)
Professor Emeritus of Math (1969).

INGLE, DONA A., M.S. (University of Missouri)
Home Economics Agent (II) (1974).

JACKSON, ELMO L., Ph.D. (Harvard University)
Professor Emeritus of Economics (1975).

INGLE, KELSEY H., M.S. (Univ. of N. Carolina)
Instructor Emeritus, RFUF, College of Engineering (1975).

JOHNS, ROE L.
Professor of Education, Education Administration (1971).

JOHNSON, CARL HENRY, Ph.D. (University of Washington)
Professor Emeritus of Pharmacognosy (1976).

JOHNSON, ROY IVAN, Ph.D.
Office of the Dean (1972).

JOHNSON, WARREN O., B.A.
Professor (1970).

JONES, ELISE C., B.A. (Agnes Scott)
Research Instructor Emeritus, Business Administration, Bureau of Economics

JONES, JOHN PAUL, JR., M.A.
Professor and Dean Emeritus of Journalism and Communications (1977).

JORGENSON, MILFORD CHRISTEN
Extension Agent, Horticulture (III), IFAS, County Work (1972).

JOYCE, JAMES B., D.D.S. (Marquette University)
Clinical Associate Professor (1975).

KAUFMAN, CLEMENS MARCUS, Ph.D. (University of Minnesota)
Professor (Silvic), IFAS (1976).

KELSHEIMER, EUGENE G., Ph.D. (Ohio State University)
Professor Emeritus, IFAS, Gulf Coast Experimental Station (1969).

KEPPEL, REUBIN A., M.S.E. (University of Florida)
Assistant Professor of Chemical Engineering (1973).

KIDDER, RALPH W., M.S.
Professor Emeritus of Animal Husbandry (1968).

KIKER, JOHN E., M.C.E.
Professor Emeritus of Civil Engineering (1969).

KILBY, JOHN D., Ph.D. (University of Florida)
Associate Professor Emeritus (1974).

KILLINGER, GORDON BEVERLY, Ph.D. (Iowa State University)
Professor Emeritus, (Forage and New Crops Management) and Assistant Chairperson, Department of Agronomy, IFAS, RFUF (1975).

KINARD, DRAYTON TUCKER, Ph.D. (Michigan State University)
Professor Emeritus (Agricultural Engineer), IFAS (1974).

KIRK, WILLIAM G., Ph.D. (Iowa State University)
Animal Scientist and Vice-Director Emeritus, Range Cattle Experimental Station (1968).

KISER, LORA A., M.S. (North Carolina State Univ.)
Professor Emeritus (Extension Home Economist), IFAS (1976).

KLUGE, RALPH W.
Professor Emeritus of Civil Engineering (1971).

KNORR, LOUIS C., Ph.D. (Cornell University)
Professor Emeritus, IFAS (1971).

KNOWLES, HAROLD L., Ph.D. (Kansas University)
Professor Emeritus, University College, Physical Sciences (1972).

KOKOMOOR, FRANKLIN W., Ph.D. (University of Michigan)
Professor Emeritus of Math and Astronomy and Head of Department (1960).

KRESS, JACOB H., M.D. (University of Virginia)
Chief, Occupational Medicine (1977).

KRIENKE, WALTER ALBERT, M.S.
Associate Professor Emeritus (Associate Diary Technologist), IFAS (1976).

KRONSBEIN, JOHN
Professor Emeritus of Metallurgical and Materials Engineering (1971).

KUITERT, LOUIS C., Ph.D. (University of Kansas)
Professor (1976).

KUNDEL, TEWES, M.S.
Associate Professor Emeritus of Electrical Engineering (1970).

KURTZ, ALBERT K., Ph.D. (Ohio State University)
Professor Emeritus of Psychology (1968).

LACKEY, JAMES BRIDGES, Ph.D. (Columbia University)
Professor Emeritus of Environmental Engineering Sciences (1966).

LAESSLE, ALBERT M.
Associate Professor, Arts & Sciences, Zoology (1972).

LANE, DAVID, Ph.D. (Columbia University)
Professor of Education (1975).

LARRICK, THOMAS, M.Arch.
Professor Emeritus of Architecture (1971).

LAUTER, ELSA G.
Professor Emeritus, RFUF (1971).

LAWRENCE, FRED PARKER, M.S.A. (University of Florida)
Professor Emeritus of Fruit Crops (Citriculturist), IFAS (1974).

LEAVITT, BENJAMIN BURTON, Ph.D. (Harvard University)
Associate Professor of Zoology (1976).

LEBER, GAIL W.
Assistant Professor (Assistant Meteorologist) IFAS, NWS, Agricultural Research Center, Lakeland (1975).

LEE, ROBERT C., Ph.D. (George Peabody College)
Associate Professor (1974).

LEWIS, EDWARD H., M.A. (University of Minnesota)
Associate Professor Emeritus in Engineering (1969).

LIPSCOMB, RALPH W., M.S.
Associate Professor Emeritus, IFAS, North Florida Experimental Station Marianna Unit (1970).

LOFTEN, WILLIAM TRAVIS, M.A.E.
Associate Professor Emeritus of Agricultural and Extension Education, IFAS (1975).

LONG, STEPHEN GANO, M.A. (University of Florida)
Assistant Professor of English (1977).

LORZ, ALBERT P., Ph.D. (University of Virginia)
Professor Emeritus, IFAS, Vegetable Crops (1972).

LUNDY, HOSEA WILLIA, B.S.A.
Associate Professor Emeritus (Associate Agronomist), Agricultural Research Center, Live Oak, IFAS (1974).

MACLACHLAN, EMILY STEVENS, M.A.
Assistant Professor of Social Sciences and Sociology (1975).

MAGIE, ROBERT ODGEN, Ph.D. (University of Wisconsin)
Professor (Plant Pathologist), IFAS Agricultural Research and Education Center, Bradenton (1977).

MALONEY, FRANK E., J.D. (University of Florida)
Dean Emeritus and Professor in Law (1973).

MARZKE, FREDERICK OTTO, Ph.D. (Michigan State University)
Professor (Entomologist), IFAS, USDA, Insect Attractant Behavior Research Lab (1975).

MARTINSON, EARL P., M.A.
Professor Emeritus of Industrial and Systems Engineering (1964).

MASE, DARREL J., Ph.D. (Columbia University)
Dean Emeritus of Health Related Professions (1971).

MATHIS, BENJAMIN L., M.A.
Assistant to the Vice President for Student Affairs (1976).

MAUDERLI, MAX O., Ph.D. (Univ. of Pennsylvania)
Professor Emeritus (1974).

MCCULLARS, FORREST NOBLE, B.S.A.
County Extension Director-Agriculture (II), Indian River (1975).

MCDONALD, ELLEN M., M.A.
Instructor, P. K. Yonge Laboratory School (1975).

MCELWEE, EDGAR W., Ph.D. (Ohio State University)
Professor Emeritus (1973).

MCFADDEN, SAMUEL EDGAR, JR., Ph.D. (University of Virginia)
Assistant Professor (Assistant Ornamental Horticulturist), IFAS (1976).

MCFERRIN, JOHN BERRY, Ph.D. (University of North Carolina)
Professor Emeritus of Finance and Associate Dean, College of Business Administration (1976).

MCINTOSH, PLEASANT R., M.F.A.
Professor Emeritus of Art (1968).

MCLENDON, IDA R., Ph.D. (Ohio State University)
Associate Professor Emeritus of Education (1967).

MCMULLEN, KENNETH S., M.Ag.
Professor Emeritus, IFAS (1969).

MCPHERSON, WILLIAM KENNETH, M.S. (Iowa State University)
Professor Emeritus (Agricultural Economist), IFAS (1974).

MCQUITTY, JOHN V., Ph.D. (Kentucky)
Director Emeritus, Board of Examiners (1972).

MCSWINE, JOSEPHINE H., B.S.H.E. (Mississippi So. C.)
CED and Extension Agent (I), RFUF (1967).

MEDLIN, QUENTIN, B.S.A.
County Extension Director (II), Citrus County (1974).

MEHLBERG, HENRY, Ph.D. (University of Lvov)
Graduate Research Professor, Philosophy and Physics (1975).

MEHRHOF, NORMAN R., M.Ag.
Professor Emeritus of Poultry Science; Poultry Husbandman Emeritus, Agricultural Experiment Station (1963).

MILES, GUY SIMPSON, Ph.D. (Vanderbilt University)
Associate Professor of English (1973).

MILLAR, JANE CARREE, M.A. (Ohio State University)
Assistant Professor of Physical Education (1976).

MILLER, JAMES CHARLES, B.S.
Extension Agent (II), Madison County (1974).

MIMS, BERNICE A., M.A.
Professor Emeritus, RFUF (1958).

MITCHELL, JEAN O., M.A.E.
Instructor, RFUF (1958).

MOONEY, ERNEST GORDON, M.P.E.
Associate Professor of Physical Education (1977).

MOORE, WILLIAM EDGAR, Ph.D. (Peabody College)
Professor Emeritus, University College, Comprehensive Logic (1972).

MORRIS, ALTON C., Ph.D. (University of North Carolina)
Professor Emeritus of English (1973).

MORRIS, CHARLES W., Ph.D. (Chicago)
Research Professor Emeritus, RFUF (1971).

MORSE, WALTER P., Ph.D. (University of Florida)
Associate Professor Emeritus of Math (1971).

MUEHLNER, FELIX, U.J.D. (Frederick William)
Professor Emeritus, RFUF (1969).

MULLER, ALBERT S., B.S.A. (Cornell University)
Associate in (1973).

MULLINS, ROBERT SPENCER, Ph.D. (University of Minnesota)
Professor (Plant Pathologist), IFAS (1977).

MUMA, MARTIN H.
Professor (Entomologist), IFAS (1971).

MURPHEE, CLYDE ELWYN, D.P.A. (Harvard University)
Associate Professor Emeritus, Food and Resource Economics Department, IFAS (1975).

MYERS, FRANCIS C., M.A. (Harvard)
Assistant Professor Emeritus, RFUF (1971).

NEFF, THOMAS O'NEIL, M.S.E.
Associate Professor Emeritus of Mechanical Engineering (1975).

NELLER, JOSEPH R., Ph.D. (Rutgers University)
Soils Chemist Emeritus, Agricultural Experiment Station (1962).

NELSON, WALLACE MARTIN, Ph.D. (University of Florida)
Associate Professor of Social Sciences (1977).

NESMITH, JAMES, Ph.D. (North Carolina State University)
Associate Professor Emeritus, (Soil Specialist), IFAS (1976).

NETTLES, VICTOR FLEETWOOD, Ph.D. (Cornell University)
Professor Emeritus (Horticulturist), IFAS (1975).

NEWTON, TISSOT A., Ph.D. (Ohio State University)
Entomologist Emeritus, Agricultural Experiment Station (1964).

NIELAND, LOUIS T.
Professor Emeritus, RFUF (1956).

NICKELSON, WILLIAM R.D.
Assistant Professor Emeritus of Electrical Engineering (1971).

NOLAN, WILLIAM JOHN, Ph.D. (University of Michigan)
Professor of Chemical Engineering (1977).

NORMAN, OSCAR NEWTON
Assistant Professor, IFAS, NWS, AREC, Lakeland (1972).

NULTON, LUCY, M.A.
Instructor Emeritus P. K. Yonge Laboratory School (1973).

NUTTER, HAZEN EDWARD, M.A. (University of Florida)
Professor Emeritus of Education (1975).

O'CONNELL, STEPHEN CORNELIUS, J.D., LL.D. (Jacksonville University), D.Ed. (Biscayne College), LL.D. (Notre Dame University)
President Emeritus (1973).

ODOM, ALBERT HILL, M.S.A.
County Extension Director (II), Jefferson County (1975).

O'QUINN, CLARENCE FENTRESS
County Agent (II), IFAS, County Work (1972).

ORAS, ANTS
Professor Emeritus of English (1972).

ORMOND, WILLIAM NEWMAN, M.A. (University of Florida)
Associate Professor of English, Adviser (1975).

ORSENIGO, JOSEPH R., Ph.D. (Cornell University)
Professor Emeritus (Plant Physiologist), IFAS, Agricultural Research and Educational Center, Belle Glade (1976).

OSBORN, GEORGE COLEMAN, Ph.D. (Indiana University)
Professor Emeritus of Social Sciences (1974).

O'STEEN, ALVA W., M.S.
Professor Emeritus, IFAS (1969).

OTTE, BURTON J., M.S. (University of Florida)
Curator, RFUF (1962).

PAGE, RALPH E., Ph.D. (Syracuse University)
Professor and Dean Emeritus of Political Science, Arts & Sciences (1971).

PATTERSON, PAUL B., Ph.D. (Univ. of Florida)
Assistant Professor, RFUF (1963).

PAYNE, ANCIL N., Ph.D. (University of Illinois)
Professor of History (1970).

PEELER, RUTH B.
Instructor, Education , P. K. Yonge (1972).

PENNINGTON, CLARK W., C.E.
Professor Emeritus and Associate Professor of Mechanical Engineering (1970).

PERRY, FRANKLIN S., M.Ag. (University of Florida)
Professor Emeritus (1974).

PETERSON, ERHART G., M.B.A., LL.B. (University of Florida)
Professor Emeritus of Accounting (1969).

PETTIS, AUBREY M., M.S.A.
Associate Professor Emeritus (Associate Agricultural Engineer), IFAS (1975).

PEYTON, FLOYD A., DSC (University of Michigan)
Professor (1974).

PHANEUF, VICTOR S., B.S.E.
Associate Professor Emeritus of Building Construction (1969).

PHILPOTT, FRANK, Ed.D. (New York University)
Assistant Professor Emeritus of Physical Education (1966).

PIERCE, EMORY L., Ph.D. (University of Florida)
Professor Emeritus of Biological Sciences (1970).

PIRENIAN, ZAREH M., M.S. (University of Florida)
Associate Professor Emeritus of Mathematics (1972).

PLATT, WILLIAM J., JR., M.S.A.
Professor Emeritus, IFAS (1968).

PRESCOTT, FORD L., M.E.
Professor Emeritus of Mechanical Engineering (1963).

PRICE, JOSEPH E., B.A.E.
Professor Emeritus of Social Sciences, Adviser (1968).

PRICE, THOMAS J.
Assistant Professor, RFUF (1966).

PRIDGEN, ILA R.
Assistant Professor, RFUF (1955).

PRYOR, ROBERT SHEPERD, B.S.
County Extension Director (III), Palm Beach County (1975).

PULLAN, VERONICA A.
Instructor, Education, P. K. Yonge Laboratory School (1972).

PURSER, STUART ROBERT, M.F.A.
Professor of Art (1976).

PYLES, THOMAS, Ph.D. (Johns Hopkins University)
Professor Emeritus of English (1972).

RAPPENECKER, CASPAR, Ph.D. (Cornell University)
Professor Emeritus of Geology (1976).

RAYMOND, WALTER, B.Arch.
Professor Emeritus of Architecture (1974).

REAVES, CLARENCE W., M.S.A.
Professor Emeritus of Dairy Science (1971).

REED, JOHN CLIFFORD, M.E. (Ohio State)
Professor Emeritus, Mechanical Engineering (1973).

REID, JOHN I., Ph.D. (Stanford University)
Associate Professor of Spanish (1974).

REITZ, J. WAYNE, Ph.D. (University of Wisconsin)
President Emeritus (1967).

REYNOLDS, MABEL M.
Associate Librarian, Catalog, College of Libraries (1971).

RHODEN, JAMES LLOYD, M.A. (University of Florida)
County Extension Director (III) (1972).

RICE, ROBERT J., M.A.
Assistant Professor of Journalism and Communications (1966).

RING, ALFRED A., Ph.D.
Professor Emeritus of Real Estate (1974).

ROSE, GILLIS NORMAN, B.S. (Murray State College, Kentucky)
Associate Professor Emeritus, Food and Resource Economics Department, IFAS (1976).

ROSENBERGER, STANLEY E., Ph.D. (University of Florida)
Professor Emeritus, Food and Resource Economics Department, IFAS (1975).

ROUSE, ALVIN HAMILTON, M.S.
Professor (Chemist), IFAS Agricultural Research and Education Center, Lake Alfred (1977).

SADLER, SAMUEL GOULD, Ed.D. (University of Florida)
Associate Professor of Mathematics (1976).

SALT, ELLIS B., Ed.D. (New York University)
Professor Emeritus of Professional Physical Education (1967).

SANDERS, DORSEY A., D.V.M. (Kansas State College)
Professor Emeritus, IFAS (1968).

SASHOFF, STEPHEN P., M.S. (University of Pittsburgh)
Professor Emeritus of Electrical Engineering (1971).

SAWYER, EARL MORROW, Ph.D. (University of Florida)
Associate Professor Emeritus of Physics (1974).

SCHIFFLI, RICHARD J., B.S.B.A. (University of Florida)
University Business Manager (1977).

SCHMIDT, DORIS T., M.A.
Professor Emeritus of Music (1966).

SCHOONMAKER, LUCAS W., B.S.E.E.
Associate Professor Emeritus of Electrical Engineering.

SCHUMACHER, A. S., Ph.D. (Western Reserve U.)
Professor Emeritus of Clinical Psychology and Psychology (1976).

SCHWARTZ, FRANK LEROY, Ph.D. (University of Michigan)
Professor Emeritus, Mechanical Engineering (1972).

SCHWEYER, HERBERT ENGLISH, Ph.D. (Columbia University)
Professor Emeritus of Chemical Engineering (1976).

SCUDDER, DELTON LEWIS, Ph.D. (Yale University)
Professor Emeritus of Religion (1977).

SEABERG, LILLIAN MARIE, M.A.
Associate Librarian, Reference and Bibliography (1973).

SHARPE, RALPH HAROLD, M.S. (Texas A & M University)
Professor Emeritus of Fruit Crops (Horticulturist), IFAS (1975).

SHARPE, MILES HERVEY, Ph.D. (Pennsylvania State University)
Professor, Editor, Editorial Department, IFAS (1977).

SHECKLES, MARY W., Ed.D. (Columbia University)
Associate Professor Emeritus, Education (1972).

SHIELDS, MURRAY W., Ph.D. (University of Washington)
Professor Emeritus of Economics (1969).

SHOEMAKER, JAMES S., Ph.D. (University of Minnesota)
Professor of Food Science Emeritus and Horticulturist Emeritus, Agricultural Experiment Station (1966).

SILK, ERNEST S., M.S.
Assistant Professor Emeritus of Physical Science ((1973).

SIMANTON, WILLIAM ALDRICH, Ph.D. (Iowa State University)
Professor Emeritus, Agricultural Research and Education Center, Lake Alfred, IFAS (1973).

SIMONS, JOSEPH H., Ph.D. (University of California)
Professor Emeritus of Chemical Engineering (1967).

SITES, JOHN WILBUR, Ph.D. (Ohio State University)
Professor (Horticulturist) and Dean for Research Emeritus, IFAS (1976).

SKELLETT, ALBERT M., Ph.D. (Princeton University)
Professor Emeritus of Electrical Engineering (1969).

SLAUGHTER, JOHN EIDELL, M.A. (University of Florida)
Assistant Professor of Social Sciences and History (1977).

SMALL, KENNETH
Director Emeritus, WRUF AM-FM (1974).

SMALLWOOD, MARK, M.S.E. (University of Florida)
Assistant Professor Emeritus of Electrical Engineering (1973).

SMITH, CARROLL N., Ph.D. (George Washington University)
Professor Emeritus of Entomology and Director, USDA Insect Attractants Behavior and Basic Biology Research Laboratory (1970).

SMITH, CHARLES B., Ph.D., (University of Wisconsin)
Professor Emeritus of Math (1968).

SMITH, DOROTHY MARY, M.Ed.
Professor and Dean Emeritus, College of Nursing (1973).

SMITH, EDWARD FRANK, E.E. (University of Florida)
Associate Professor Emeritus of Electrical Engineering (1975).

SMITH, FREDERICK B., Ph.D. (Iowa State University)
Professor of Soils Emeritus and Microbiologist Emeritus, Agricultural Experiment Station (1967).

SMITH, JAMES HUNN, M.S.M.E.
Assistant Professor of Mechanical Engineering (1977).

SMITH, RALPH LESLIE, M.S. (Purdue University)
Associate Professor Emeritus (Field Crop Management), IFAS, ARC, Jay (1975).

SMITH, T. LYNN, Ph.D. (University of Minnesota)
Professor Emeritus of Sociology (1974).

SMITH, WILLIAM WARD
Associate Professor, IFAS, Entomology and Nematology (1972).

SMITH, WINSTON O., Ph.D. (Purdue University)
Professor Emeritus of Mechanical Engineering (1968).

SPACHE, GEORGE D., Ph.D. (Rutgers University)
Professor Emeritus of English and Education (1969).

SPENCER, ERNEST L., Ph.D. (Rutgers University)
Soils Chemist Emeritus and Head Gulf Coast Experiment Station (1968).

SPIVEY, HERMAN EVERETTE, Ph.D. (Univ. of North Carolina)
Professor Emeritus of English (1974).

SPURLOCK, ALVIN HAROLD, M.S.A. (University of Florida)
Professor Emeritus, Food and Resource Economics Department, IFAS (1973).

STANLEY, DENNIS K., M.A.E. (Pennsylvania State University)
Dean Emeritus of the College of Physical Education, Health, and Recreation and Professor of Professional Education (1976).

STANLEY, JAMES MIDDLETON, M.S. (Virginia Poly.)
Professor (Agricultural Engineer), USDA, IFAS (1977).

STARR, NATHAN C., Ph.D. (Harvard University)
Professor Emeritus of English and Humanities (1963).

STEARNS, THOMAS W., Ph.D. (University of Minnesota)
Professor Emeritus of Chemistry (1974).

STEPHENS, RICHARD B., LL.B. (University of Michigan)
Professor Emeritus of Law (1977).

STEVENS, BILLIE KNAPP, M.A.
Professor Emeritus of Professional Physical Education (1976).

STEVENS, GRACE A., M.A. (Columbia U. Teachers C.)
Instructor, RFUF (1950).

STOCKSTILL, ROY E., B.S.
Assistant Professor Emeritus, Engineering, Engineering Graphics.

STORER, MORRIS B., Ph.D. (Harvard)
Professor Emeritus of Humanities (1973).

STOVER, LOREN H.
Assistant in Horticulture Emeritus, Watermelon and Grape Investigations Laboratory (1965).

STRYKER, PHILIP DAVID, Ph.D. (Northwestern University)
Professor Emeritus of English (1976).

SVARLIEN, OSCAR, Ph.D. (University of North Carolina)
Professor Emeritus of Political Science (1976).

SWANSON, DANIEL C., Ph.D. (Cornell University)
Professor Emeritus of Physics (1971).

SWANSON, LEONARD E., D.V.M. (Ohio State University)
Professor Emeritus, IFAS (1967).

SWETT, MANETTE, M.A.
Instructor Emeritus, P. K. Yonge Laboratory School (1976).

SWINFORD, KENNETH R., Ph.D. (University of Michigan)
Professor Emeritus (1975).

TAMS, MADGE PENTON, B.A. in L.S.
Librarian, Reference and Bibliography (1973).

TELLER, MORTON HERMAN, M.A.E.
Assistant Professor Emeritus of Physics (1974).

THOMASON, OLIVER BRUCE, Ph.D. (Penn. State University)
Professor Emeritus of Rehabilitation Counseling (1975).

THOMPSON, ETHEL P., B.S. (Murray State College)
Home Economics Agent II (1973).

THOMPSON, L. G., JR., Ph.D. (Iowa State University)
Professor of Soil Science (1973).

THOMPSON, WILLIAM L., B.S.
Entomologist Emeritus, Citrus Station (1962).

THORNTON, GEORGE, Ph.D. (Ohio State University)
Professor Emeritus, IFAS (1971).

TIFFIN, WILLIAM TRUITT, M.S.M.E.
Professor Emeritus of Materials Science and Engineering (1973).

TISSOT, ARCHIE N., Ph.D. (Ohio State)
Entomologist Emeritus, Agricultural Experiment Station (1964).

TONER, RAYMOND J., M.A.
Assistant CLAS Director (1975).

TORRACA, PASQUALE MARIO
Professor Emeritus, Department of Architecture (1964).

TOWNSEND, RUTH O., R.N. (St. Vincents Hospital)
Senior Research Assistant Emeritus, IFAS (1969).

TOWNSEND, THOMAS RALPH, M.Ag.
County Extension Director-Agricultural (III), Volusia County (1976).

TUNISON, PAUL B., M.Ed. (University of Florida)
Assistant Professor Emeritus of Physical Science (1973).

TURNER, GLOVER M., LL.B.
Head Emeritus, Department of Special Programs, Division of Continuing Education (1968).

TUTTLE, FRANK W., Ph.D. (University of Iowa)
Professor Emeritus of Economics (1967).

VALENTINE, MARION BULLARD, B.S.H.E.
Extension Home Economics Agent (III), Lake County (1976).

VOLK, GAYLORD MONROE, Ph.D. (University of Wisconsin)
Professor Emeritus (Soils Chemist), IFAS (1975).

VOSS, ELBERT, Ph.D. (University of Florida)
Professor Emeritus of Pharmacy (1973).

WALKER, BIRON H., M.A. (University of Florida)
Professor of English (1975).

WALKER, SUE ROBERTS, B.S.
Associate Librarian, Acquisitions (1947-1976).

WALKER, JAMES HENRY, M.S.A.
Extension Agent—Soils & Agronomy (III), Escambia Co. (1976).

WALLACE, ALEXANDER P., Ph.D. (University of Virginia)
Graduate Research Professor Emeritus of Mathematics (1973).

WALLACE, HOWARD K., Ph.D. (University of Florida)
Professor Emeritus, Arts & Sciences, Zoology (1972).

WALLACE, MAXWELL JOSEPH, Ph.D. (Cornell University)
Associate Professor Emeritus of French (1975).

WALSH, HELEN, B.S. (Mississippi State University)
Associate in Obstetrics and Gynecology (1973).

WARMKE, HARRY EARL, Ph.D. (Stanford University)
Professor of Sociology and Psychiatry (1977).

WARREN, JESSIE ALMA, M.A. in L.S.
Assistant Professor Emeritus (Assistant Communications Specialist), IFAS (1976).

WATKINS, JOHN V., M.S.A.
Professor Emeritus of Ornamental Horticulture (1969).

WATKINS, MARSHALL OWEN, D.P.A. (Harvard University)
Dean Emeritus, Division of Continuing Education and Dean Emeritus for Extension Services, IFAS (1969).

WATKINS, MAUD
Instructor, RFUF.

WATSON, JAMES N., B.S. (University of Florida)
County Agent III (1975).

WEBER, GEORGE F., Ph.D. (University of Wisconsin)
Professor Emeritus of Plant Pathology (1964).

WEBER, IRVING L.
Professor Emeritus of Sociology (1971).

WEIMER, RAE O.
Professor and Dean Emeritus, College of Journalism and Communications (1968).

WELLS, THOMAS N., B.S. (Rose Polytechnic Institute)
Business Manager Emeritus (1970).

WENZEL, FREDERICK WILLIAM, JR., Ph.D. (University of Massachusetts)
Professor Emeritus, Agricultural Research and Education Center, Lake Alfred, IFAS (1973).

WEST, STANLEY L., LL.B., B.S. in L.S.
Director of Libraries Emeritus and Professor of Library Science Emeritus (1967).

WHITE, BARBARA CRITTENDEN, M.A. (New York University)
Chairman and Professor, Department of Physical Therapy (1973).

WHITE, JOSEPH B., Ph.D. (Peabody College)
Dean Emeritus, Education (1972).

WHITEHEAD, RICHARD HOLMES, B.A. (University of Florida)
Dean of Admissions and Records (1977).

WHITNER, BENJAMIN F., JR., B.S.A.
Assistant Horticulturist Emeritus, Central Florida Experimental Station (1967).

WILCOX, DONALD B., M.S.M.E. (Georgia Tech.)
Professor Emeritus of Industrial and Systems Engineering (1975).

WILGUS, ALVA C., Ph.D. (University of Wisconsin)
Professor Emeritus of History and Director Emeritus, Carribbean Conferences (1967).

WILLIAMS, DAVID T., Ph.D. (New York University)
Professor Emeritus of Engineering Sciences (1977).

WILLIAMS, HERMAN BARNES, B.M.E.
Associate Professor Emeritus, Engineering Graphics (1972).

WILLIAMS, IZOLA F., M.S. (University of Tennessee)
Associate Professor and Chairman (1973).

WILLIAMS, MARGARET RUTH, M.A. (Michigan State University)
Professor Emeritus of Medical Technology (1974).

WILLIAMSON, HERBERT DUFF, M.C.E.
Professor Emeritus of Building Construction (1975).

WILSON, JOHN W., D.Sc. (Harvard)
Professor Emeritus, RFUF (1966).

WING, ALEXANDER HOLBROOK, Ph.D. (Columbia Univ.)
Professor of Electrical Engineering (1976).

WINSOR, HERBERT WILLIAMS
Assistant Professor, IFAS, Soil Science (1972).

WISE, JACOB HOOPER, Ph.D. (Peabody College)
Chairman Emeritus of Comprehensive Courses; Reading, Speaking, and Writing, and Professor Emeritus of English (1964).

WOLFE, HERBERT S., Ph.D. (University of Chicago)
Professor Emeritus of Fruit Crops, IFAS, RFUF (1964).

WOLFENBARGER, DANIEL OTIS, Ph.D. (Cornell University)
Professor Emeritus, Entomologist, IFAS, Agricultural Research and Educational Center, Homestead (1974).

YODER, LOWELL C., M.A.
Associate Professor Emeritus of Marketing (1967).

YOUNG, CANNING K. M., M.A.F.A.
Professor Emeritus of Architecture (1973).

YOUNG, GERTRUDE MARIAN, Ph.D.
Associate Professor of Education (1973).

YOUNG, THOMAS WILBUR, Ph.D. (Cornell University)
Professor (Horticulturist), IFAS, Agricultural Research and Education Center, Homestead (1976).

YOZGATLIOGLY, CUNEYT A., M.D.
University Psychiatrist.

ZEIGLER, LOUIS WILLIAM, Ph.D. (University of Florida)
Professor Emeritus of Fruit Crops, IFAS (1976).

ZETROUER, WALLACE, M.S.
Assistant Professor Emeritus of Electrical Engineering (1973).

ZIMMERMAN, IRENE, Ph.D. (University of Michigan)
Librarian, Reference and Bibliography (1977).

LIST OF DECEASED STAFF—

ANDERSON, CHARLES LAMAR, M.S.A. (University of Florida)
Assistant Professor (Assistant Agricultural Economist), IFAS. (Deceased January, 1976).

BOLLES, ROBERT STEPHEN, Ed.D. (Columbia University)
Dean, College of Architecture and Fine Arts; Professor of Music. (Deceased June, 1974).

BRIDGES, CHARLES MARTIN, JR., Ed.D. (Univ. of Tennessee)
Professor of Education. (Deceased October, 1973).

BRUNET, JOSEPH, Ph.D. (Stanford University)
Professor Emeritus of Classical Languages. (Deceased September, 1973).

BULLARD, WILLIAM ROTCH, JR., Ph.D. (Harvard University)
Associate Professor of Anthropology, Chairman of the Department of Social Sciences and Associate Curator, Florida State Museum. (Deceased June, 1972).

BULLEN, RIPLEY PIERCE, D.Sc. (University of Florida)
Curator Emeritus of Anthropology, Florida State Museum (Deceased 1976).

CALAWAY, WILSON, M.S. (University of Florida)
Assistant Professor Emeritus of Entomology, (Deceased December, 1971).

CARSON, ROBERT E., Ph.D. (University of Michigan)
Professor Emeritus of Humanities, Adviser. (Deceased November, 1971).

CATE, CHARLES A., Ed.D. (University of Texas)
Associate Professor of Education. (Deceased August, 1972).

COOPER, PHILIP, M.D. (Harvard Medical School)
Professor of Surgery, College of Medicine. (Deceased October, 1972).

CRAPS, JOHN ELLIS, Ph.D. (Johns Hopkins University)
Associate Professor Emeritus of German (Deceased, 1973).

CURREN, CHARLES H., D.Sc. (University of Montreal)
Professor, Agricultural Research Center, Leesburg. (Deceased January, 1972).

DAANE, BETH, M.S.
Associate Librarian, Reference and Bibliography. (Deceased August 5, 1977).

DAVIS, EDWARD ARNOLD, Ed.D. (University of Florida)
Assistant Professor of Education. (Deceased June, 1974).

DAVIS, ROBERT STANLEY, B.Arch.
Assistant Professor of Architecture. (Deceased May, 1971).

DRAGSTEDT, LESTER, M.D. (Rush Medical College), Ph.D. (University of Chicago)
Research Professor Emeritus of Surgery and Professor Emeritus of Physiology (Deceased July, 1975).

EDDINS, ARTHUR H., Ph.D. (State University of Iowa)
Plant Pathologist Emeritus, (Deceased October, 1974).

FIBNER, JOHN R., B.S.
Director of Boosters.

GEORGE, THEODORE SAMUEL, Ph.D. (Duke University)
Professor Emeritus of Electrical Engineering (Deceased February, 1975).

FARRELL, WILBURN CARLOS, M.A.
County Extension Director (III), Alachua County, (Deceased September, 1974).

FOX, GEORGE GILLESPIE, Ph.D. (Princeton University)
Professor Emeritus of English. (Deceased April, 1972).

HOSKINS, WILBUR JOLIFFE, M.S.
Instructor, P. K. Yonge Laboratory School. (Deceased October 4, 1977).

HUTTON, CURTIS EVANS, Ph.D. (Iowa State University)
Professor (Soil Chemist) and Center Director, IFAS, Agricultural Research Center, (Deceased May, 1972).

JOURARD, SIDNEY M., Ph.D. (Buffalo University)
Professor of Psychology. (Deceased December, 1974).

HILL, WALTER A., D.B.A. (University of Washington)
Associate Professor. (Deceased June, 1974).

KELBERT, DAVID G., A.
Associate Horticulturist Emeritus, Gulf Coast Experimental Station. (Deceased October, 1971).

KIDD, KENNETH P., Ph.D. (Peabody University)
Professor Emeritus of Secondary Education. (Deceased February, 1975).

KINCAID, RANDALL RICH, Ph.D. (University of Missouri)
Professor Emeritus (Plant Pathologist), IFAS, AREC, Quincy. (Deceased November, 1971).

KINER, CLEVELAND D., M.E.D. (Pennsylvania State University)
Assistant Professor and Director (Deceased, 1973).

KIRCHNER, WALTER, M.D. (University of Louisville)
Clinical Associate Professor

KIRKLAND, E. C., Ph.D. (Northwestern University)
Professor of English. (Deceased October, 1972).

KORU, SADISABIT, M.A.
Associate Professor of Architecture. (Deceased December, 1972).

LAUTER, WERNER M., Ph.D. (Griefswald)
Professor Emeritus of Pharmaceutical Chemistry. (Deceased January, 1972).

LAVIRE, WILLIS A., EDD (University of Florida)
Associate Professor (Deceased March, 1974).

LUSKY, RAFAEL, Ph.D. (M.I.T.)
Assistant Professor of Economics (Deceased May, 1976).

MAUDERLI, MAX O., Ph.D. (University of Pennsylvania)
Professor Emeritus of German, (Deceased September, 1974).

MCCUBBIN, EARL N., Ph.D. (Cornell University)
Horticulturist Emeritus, Potato Investigations Laboratory. (Deceased January, 1970).

MELENY, HENRY E., M.D. (Columbia University)
Professor Emeritus of Medicine. (Deceased, 1971).

MURPHEY, MILLEDGE, Ph.D. (Oklahoma State University)
Professor of Entomology, IFAS. (Deceased 1977).

OPPELT, W. WALTER, M.D. (Harvard Medical School)
Professor of Medicine and Pharmacology and Director, Clinical Research Center. (Deceased February, 1974).

PEREZ, GUILLERMO JORGE, M.D. (University of Paris)
University Physician, Student Health Service; Assistant Professor of Pediatrics, College of Medicine. (Deceased December, 1975).

POLLOCK, KENNETH CHARLES, Ph.D. (Northwestern University)
Associate Professor of Communicative Disorders and Speech. (Deceased August, 1974).

POWERS, LEONARD S., LL.M. (Duke University)
Professor of Law. (Deceased March, 1972).

PRUGH, BYRON JONATHAN, B.S.C.E.
Professor of Building Construction. (Deceased June, 1974).

REED, THOMAS MCKENNAN, Ph.D. (Pennsylvania State Univ.)
Professor of Chemical Engineersing. (Deceased March, 1976).

ROBERTSON, CHARLES A., Litt.D. (University of the South)
Professor Emeritus of English. (Deceased January 4, 1975).

ROSIER, NELSON EUGENE, M.S.E.E.
Associate Professor of Electrical Engineering. (Deceased February, 1972).

RUFF, WILLIAM, Ph.D. (Yale University)
Professor Emeritus of English. (Deceased September, 1974).

SHIELDS, MURRAY W., Ph.D. (Auburn University)
Professor of Economics. (Deceased January, 1976).

SCHUMACHER, A. S., Ph.D. (Western Reserve University)
Professor of Clinical Psychology and Psychology. (Deceased 1976).

SLATER, JOHN C., Ph.D. (Harvard University)
Graduate Research Professor Emeritus of Physics & Chemistry. (Deceased July, 1976).

SMITH, FRANCES SHAVER, M.A.
Associate Librarian, Catalog. (Deceased October, 1974).

STAKELY, JAMES OWEN, B.A.Arch.
Associate Professor of Building Construction, (Deceased February, 1974).

STANLEY, ROBERT GREENBLATT, Ph.D. (University of California)
Professor (Forest Physiologist), IFAS. (Deceased April, 1974).

STETSON, CHANDLER A. JR., M.D. (Harvard University)
Vice President for Health Affairs; Dean of College of Professor of Pathology. (Deceased May 25, 1977).

TOWERS, DOROTHY AGNES, B.S.
Extension Home Economics Agent (II), Dade County, (Deceased November, 1973).

WALCZAK, LOUISE J., Ph.D. (University of Illinois)
Assistant Professor (Deceased October 1974).

WEECH, A. ASHLEY, M.D. (Johns Hopkins Medical School)
Professor in Pediatrics (Deceased 1977).

WEIL, JOSEPH, D.Sc. (Jacksonville University)
Dean Emeritus, College of Engineering (Deceased December 1977).

WERSHOW, IRVING ROBERT, Ph.D. (Yale University)
Professor Emeritus of Spanish. (Deceased April 1977).

WEST, ERDMAN, M.S.
Professor Emeritus of Botany and Mycologist Emeritus, Agriculture Experiment Station. (Deceased, 1965).

WESTGATE, PHILIP J., Ph.D. (Cornell University)
Professor Emeritus, IFAS, Central Florida Station. (Deceased June, 1974).

WILLIAMSON, ROBERT C., Ph.D. (University of Wisconsin)
Professor Emeritus of Physics. (Deceased September, 1972).

WILSON, JOHN W., Sc.D. (Harvard University)
Entomologist Emeritus, Central Florida Experimental Station. (Deceased June, 1974).

WOLFF, GEORGE ELLIOTT, Ph.D. (Univ. of North Carolina)
Professor of Social Sciences, Advisor. (Deceased March, 1973).

WOLFORD, RICHARD WILSON, M.A. (Duke University)
Associate Professor of Management. (Deceased June, 1974).

INDEX

1978-79 Catalog

Absences or Unsatisfactory Work 30
Academic Probation 29
Accounting
  Courses 188
  Curriculum 58
Activities, Student 23
Administration, Education Courses 223
Administrative Council of the University xi
Admissions (Requirements) 9
Adult Education 223, 226
Advertising
  Courses 189, 217
  Curriculum 156
Aerospace Engineering
  Courses 189
  Curriculum 120
African History 257
African Studies Program 8
Afro-American Studies 199
Agricultural Economics and Business 243
Agricultural Engineering
  Courses 191
  Curriculum 115
Agricultural and Extension Education
  Courses 190
  Curriculum 62
Agricultural Experiment Stations 5
Agricultural Extension Service 4
Agriculture
  College of 59
  General and Cross Departmental Courses 190
Agriculture—General 190
Agronomy
  Courses 192
  Curriculum 67
Air Force ROTC 278
Allied Health 146
Alumni Services 4
American History 193, 257
American Literature 236, 239
American Studies 192
American Studies, Chair of 89
Animal Science
  Courses 193
  Curriculum 63
Animal Sciences—General 194
Anthropology Courses 194
Application Fees 15
Applied Biology 203, 256, 277
Architecture
  Courses 196
  Curriculum 74
Architecture, College of 71
Army ROTC 278
Art
  Courses 197
  Curriculum 134
Art Education 225, 229
Art History 198
Arts and Sciences
  College of 79
  General and Cross-Departmental Courses 199
  Student Council 89
Asian History 258
Asian Studies 200
Associate of Arts, Requirements for 35
Astronomy—Courses 201, 300
Astronomy—Instrumentation 201
Athletics
  Inter-Collegiate 25
  Intramural 25
Atmospheric Sciences Courses 202
Attendance Regulations 30
Automobile and Traffic 25
Averages 29

Basic Medical Sciences 276
Behavioral Studies 202
Biochemistry 203
Biochemistry and Molecular Biology Courses 203
Biological Sciences—Integrated Sequence 204
Biological Sciences, The 203
Biology, Applied 203
Board of Education x
Board of Regents x
Bookkeeping & Basic Business 106
Botany
  Courses 204, 277
  Curriculum 63, 80
Broadcasting
  Courses 205
  Curriculum 157
Building Construction
  Courses 206
  Curriculum 76
Business Administration
  College of 93
  Courses General 207
  Curriculum 96
Business Education
  Courses 229
  Curriculum 105
Business Law 207
Business Teacher Education 226, 229

Calendar v
Career Development Program 207
Chemical Engineering
  Courses 207
  Curriculum 116
Chemistry
  Courses 209
  Curriculum 80
Chinese 246
Civil Engineering
  Courses 212
  Curriculum 117
Civil Engineering Structures 212
Classical and Ancient Studies 214
Classical Languages 215
Classical Literature in Translation 214
Classics 214
Classification of Students 15, 30
CLEP (College Level Examination Program) 32
Clinical and Community Dietetics 146, 215
Clinical Psychology 216
Clubs and Societies 23
Coastal Engineering Courses 216
Communication Courses (Graduate) 216
Community Psychology 216
Comparative Politics 301
Comparative Psychology & Animal Behavior 305
Computational Facilities 6
Computational/Numerical Methods 217
Computer and Information Sciences
  Courses 217
  Curriculum 80, 118
    Arts & Sciences 80
    Business Administration 96
    Engineering 118
    University College (A&S) 39
    University College (Bus. Ad.) 40
    University College (Eng.) 42
  General Information 2
Computer and Information Systems 217
Computer Applications 217
Computer Concepts 199, 217
Computer Design/Architecture 218
Computer Printout, Arts and Sciences 81
Computer Programming 218
Computer Resources/Management 218
Computer Theory 218
Construction, Building 76
Continuing Education, Division of 2
Cooperative Education Program 219
Cooperative Education Program-Engineering 128
Cooperative Living Organization 21
Counseling and Advisement 34
Counselor Education Courses 223
Crafts 134
Creative Writing 236, 239
Criminal Justice 219
Criminology and Criminal Justice 219

Dairy Science
  Courses 220
  Curriculum 63
Dance 292
Dance Activities 292, 295
Dance Education 292
Degrees, General Requirements 27
  (See also prospective colleges)

Dentistry College of 99
Design, Graphic 134
Developmental Psychology 216
Dietetics 215, 245
Dormitories 20
Drama 23

Earth Sciences Jr. High 110
Economic and Business Research, Bureau of 6
Economic Problems & Policy 222
Economic Systems & Development 222, 258
Economics
  Courses 220
  Curriculum 96
Education
  College of 101
  General and Cross-Departmental Courses 223
Education: Administration 223
Education: Early Childhood 225
Education: Elementary 225
Education: Emotional Disorders 227
Education: Exceptional Child—Core Competencies 223, 228
Education: Exceptional Child—Gifted 228
Education: Foundations 224, 225
Education: General 225, 226
Education: Higher 226
Education: Industrial Arts 229
Education: Mental Retardation 228
Education: Middle School 226
Education: Physical & Multiple Handicapped 228, 229
Education: Secondary 226
Education: Specific Learning Disabilities 228
Education: Supervision 226
Education: Technology and Media 226, 230
Education: Vocational/Technical 227
Electrical Engineering
  Courses 231
  Curriculum 119
Employment, Student 21
Engineering, College of 113
Engineering: Aerospace 189
Engineering: Chemical 207
Engineering: Civil 213
Engineering: Computer Mathematics 262
Engineering: Electrical 231, 233
Engineering: Electrical Lab and Related Areas 233
Engineering: Environmental 214, 241
Engineering: General 214, 233
Engineering: Industrial 262
Engineering: Material 233, 268
Engineering: Mechanical 233, 234, 283
Engineering: Nuclear 283
Engineering: Ocean 216
Engineering and Industrial Experiment Station 6
Engineering Common Courses 233
Engineering Graphic Courses 234
Engineering Science and Mechanics 234
Engineering Systems—Industrial 263
Engineering Technology: Civil 235
Engineering Technology: General 235
Engineering Technology: Industrial 235
Engineering Technology: Mechanical 235
Engineering Technology
  Courses 235
  Curriculum 121
English
  Courses 236
  Curriculum 80
English: General 237, 239
English Composition 236
English Language Institute 89
English Literature 238, 239
Entomology and Nematology
  Courses 240
  Curriculum 63
Environmental Engineering Sciences 121, 241
Environmental Science 236
Environmental Studies 88
European History 258
European Studies 200
Expenses 15
Experimental Analysis of Behavior 305
Experimental Psychology 306

Fees 16
Film Studies 85
Film 205, 217
Finance 242
Finance Curriculum 96
Finance and Insurance Courses 242
Financial Aid for Students 21
Fine Arts
  College of 131
  Courses 243
Fine Arts Programs 132
Florida State Museum 4
Food and Resource Economics
  Courses 243
  Curriculum 64
Food Science and Human Nutrition
  Courses 245
  Curriculum 65
Food Service, University 23
Foreign & Biblical Languages 215, 246
Foreign Languages 246
Foreign Language Education 230
Foreign Service (See International Affairs)
Foreign Student, Adviser 19
Forest Resources and Conservation
  School of 139
  Courses 251
  Curriculum 141
Forestry and Natural Resources 251
Foundation of Education Courses 224
Fraternities
  Professional and Honorary 24
  Social 23
French Courses 248
French Language 248
French Literature in Translation 248
French Literature (Writings) 248
Fruit Crops
  Courses 252
  Curriculum 67
Full Time Load 16

General Agriculture Curriculum 60
General Information 1
General State and University Agencies 4
General Teacher Education Courses 225
Geography—Regional (Area) 253
Geography—Systematic 253
Geography Courses 252
Geology 254
German Courses 246
German Language 246, 247
German Literature in Translation 246
German Literature (Writings) 246, 247
Germanic and Slavic Languages 246
Gerontology 256
Grades 28
Graduate Record Examination 12, 17
Graduate School
  Admission 12
  Instruction 2
Graduation 27
Greek Courses 215
Greek Language 215
Greek Literature (Writings) 215
Guidance & Counseling 223
Guidance 34

Health and Hospital Administration 256
Health Care Administration 200, 256
Health Center, The J. Hillis Miller 8
Health Education & Safety 256, 291
Health Education Curriculum 179
Health, Leisure, & Physical Education 292
Health Related Professions
  College of 143
  Courses 256
Health Science 215, 256
Health Service, Student 23
Hearing & Speech Clinic 23
Hebrew Courses 215
History 257
History: General 233, 260
History of the University 1
Honors, Graduation with (See respective colleges)
Horticulture Sciences 261
Horticulture, Ornamental 285
Housing 19
Human Nutrition 215, 245
Humanities 200, 261

Icelandic Literature (Writings) 247
Individual Interdisciplinary Studies 80

INDEX

Industrial and Systems Engineering
Courses ... 262
Curriculum ... 122
Industries Cooperative Plan ... 128
Infirmary ... 23
Insurance Curriculum ... 97
Institute of Food and Agricultural Sciences ... 7
Instructional Leadership and Support Education Courses ... 226
Instructional Service Units ... 3
Inter-Collegiate Athletics ... 25
Interdisciplinary Natural Science ... 296
Interdisciplinary Studies ... 200, 262
Interior Design
Courses ... 264
Curriculum ... 75
International Affairs ... 19
International Relations ... 302
Intramural Athletics ... 25
Introductory Biology ... 204
Italian Courses ... 249
Italian Language ... 249
Italian Literature (Writings) ... 249

Japanese Language ... 246
Jewish Studies ... 89
Journalism and Communications
College of ... 153
Courses ... 264

Landscape Architecture
Courses ... 265
Curriculum ... 75
Language Arts & English Education ... 226, 230, 238
Latin American History ... 260
Latin American Studies ... 266
Latin American Studies, Center for ... 3, 160
Latin Courses ... 215
Latin (Language Study) ... 215
Latin Literature ... 215
Law
Admission ... 13
College of ... 161
Leisure ... 294
Libraries, University ... 3
Library Science ... 238
Linguistics Courses ... 266
Literatures ... 238, 240
Loans ... 21

Management
Courses ... 267
Curriculum ... 97
Marketing
Courses ... 267
Curriculum ... 97
Marriage and Family ... 202
Mass Media Communication ... 217, 265
Materials Science and Engineering
Courses ... 268
Curriculum ... 124
Mathematics
Courses ... 270
Curriculum ... 80
Mathematics: Algebraic Structures ... 272
Mathematics: Calculus and Precalculus ... 270
Mathematics: General & Finite ... 272
Mathematics: History & Foundations ... 272
Mathematics: Technology & Business ... 272
Mathematics: Topology & Geometry ... 272
Mathematics—Analysis ... 270
Mathematics—Applied ... 271
Mathematics—Discrete ... 271
Mathematics Education ... 226, 230, 271
Maximum Load ... 28
Mechanical Engineering
Courses ... 274
Curriculum ... 125
Mechanized Agriculture
Courses ... 275
Curriculum ... 66
Medical Laboratory Science ... 276
Medical Technology
Courses ... 276
Curriculum ... 147
Medicine
Admission ... 13
College of ... 162
Courses ... 276

Meteorology ... 202
Microbiology ... 277
Microbiology and Cell Science ... 276
Military Science
Courses ... 278
Division of ... 185
Minimum Load ... 28
Minority Affairs, Office for ... 19
Museum, Florida State ... 4
Music
Courses ... 280
Curriculum ... 136
Music: Applied Brasses ... 280
Music: Applied Keyboard ... 280
Music: Applied Other Instruments ... 280
Music: Applied Percussion ... 280
Music: Applied Strings ... 280
Music: Applied Voice ... 280
Music: Applied Woodwinds ... 280
Music: Church Music ... 281
Music: Composition ... 281
Music: Conducting ... 281
Music: Education ... 281
Music: History/Musicology ... 281
Music: Music Literature ... 281
Music: Musical Ensembles ... 282
Music: Opera/Musical Theatre ... 282
Music: Theory ... 282
Music Education ... 230, 281

Navigation (see Astronomy Courses)
Navy ROTC ... 279
Naval Science ... 279
Neurosciences (see Medicine Courses)
News—Editorial Curriculum ... 157
Nuclear Engineering Sciences
Courses ... 283
Curriculum ... 125
Nursing
College of ... 165
Courses ... 284
Curriculum ... 167
Student Aid ... 168
Nursing Universals ... 284
Nutrition ... 66

Occupational Therapy
Courses ... 285
Curriculum ... 148
Oceanography ... 216, 225
Oceanography: Marine Technology ... 200
Oceanography: Physical ... 216
Oral Interpretation ... 319
Organization of the University ... 1
Ornamental Horticulture
Courses ... 261, 285
Curriculum ... 67

Pest Management and Plant Protection ... 286
Petitions and Appeals ... 31
Pharmaceutical Chemistry ... 286
Pharmacology ... 287
Pharmacy
College of ... 169
Courses ... 287
Curriculum ... 171
Phi Beta Kappa ... 24, 86
Philosophers & Schools ... 289
Philosophy Courses ... 289
Philosophy, History of ... 290
Philosophy of Man & Society ... 291
Photography ... 135
Physical Education Acts (General)—Object Centered, Land ... 295
Physical Eduction Acts (General)—Performance Centered, Land ... 295
Physical Education Acts (General)—Water, Snow, Ice ... 295
Physical Education Acts (Professional)—Object Centered, Land ... 292
Physical Education Acts (Professiona)—Performance Centered, Land ... 293
Physical Education Acts (Professional)—Water, Snow, Ice ... 293, 295
Physical Education, Health and Recreation
College of ... 175
Courses ... 291
Curricula ... 177
Physical Education—General
Courses ... 295
Program ... 181

Physical Education Theory 293, 295
Physical Sciences, The 295, 296
Physical Sciences Jr. High Curriculum 110
Physical Therapy
  Courses 296
  Curriculum 149
Physician's Assistant Program 162, 297
Physics Courses 298
Physics—Specialized 300
Placement Service 22
Plant Pathology
  Courses 300
  Curriculum 66
Plant Science
  Courses 301
  Curriculum 67
Polish Language 247
Political Science Courses 301, 302
Political Theory 303
Portuguese Courses 249
Portuguese Language 249
Portuguese Literature (Writings) 249
Poultry Science
  Courses 304
  Curriculum 68
Pre-Dental Program 48
Pre-Law Program 48
Pre-Medical Program 48
Press, University 5
Pre-Theology Program 310
Pre-Veterinary Program 62
Probation for Academic Reasons 29
Process Biology 203, 277
Psychobiology 307
Psychology Courses 305
Psychology for Counseling 307
Psychology of Personality 308
Public Administration 304
Public Policy 304
Public Relations
  Courses 308
  Curriculum 158

Quantitative Methods in Business 207, 267

Radio-Television 205, 217
Reading and Study Skills Center 23
Reading Education 226, 227, 240
Readmission 27
Real Estate
  Courses 309
  Curriculum 97
Recreation Curriculum 180, 294
Refund of Fees 17
Registration Fees 16
Regulations, Student Academic 27
Rehabilitation Counseling Courses 309
Religion Courses 310
Religious Activities 23
Research, Organized 5
Residence Halls 20
Risk Management & Insurance 243
Romance Languages 247
ROTC
  Air Force 278
  Army 278
  Navy 279
Russian Courses 247
Russian Language 247
Russian Literature in Translation 247
Russian Literature (Writings) 247

Scholarships 21
Scholarships, Assistantships, Loans
  (See College concerned)
Science Education 226, 230
Science Education Programs 110
Social Intervention Systems 88
Social Psychology 308
Social Sciences, The 311
Social Sciences—Interdisciplinary 222, 260
Social Studies Education 226, 230
Social Studies Specialization 111
Social Work 313
Sociology Courses 312
Soil Science
  Courses 314
  Curriculum 68
Sororities 24
Soviet & East European Area Studies 87
Spanish Courses 249
Spanish Language 249
Spanish Literature in Translation 249
Spanish Literature (Writings) 249
Special Education
  Courses 227
  Curriculum 111
Special Instructional Units 3
Special Programs, Journalism and Communications 154
Special Students, Admission 13
Speech
  Courses 315
  Curriculum 86
Speech Clinic 23
Speech Communication 239, 240
Speech Education 230
Speech Pathology & Audiology 317
Staff and Faculty 375
Statistics Courses 318
Student Academic Regulations 27
Student Activities 23
Student Affairs, Vice President 19
Student Council, Arts & Sciences 89
Student Development 207
Student Development, Office for 19
Student Life 23
Student Accounts, Past Due 17
Study Abroad
  Bogota 89
  Poznan 90
  Utrecht 90
Subject Specialization Teacher Education Courses 229
Suspension for Academic Reasons 29
Swahili Courses 250
Swahili Language 250
Swahili Literature in Translation 250

Teacher Training
  (See Arts and Sciences and Education)
Teaching Gallery 4
Technical Communications 158
Theatre
  Courses 319
  Curriculum 138
Theatre Performance & Performance Training 320
Theatre Production & Administration 320
Time Shortened Degree Opportunities 32
Transportation and Traffic Engineering 214
Transportation Facilities 1
Tropical Agriculture Program 61

Union, Reitz, J. Wayne 22
University Calendar v
University College 33
University Counseling Center 34
University Gallery 4
University Placement Service 22
Unsatisfactory Work 29
Urban and Regional Planning Courses 321
Utrecht Program 90

Vegetable Crops
  Courses 321
  Curriculum 68
Veterans Administration 14
Veterans Programs 14
Veterinary Medicine, College of 183
Veterinary Science Courses 322

Western European Studies 88
Wildlife Ecology 141
Wildlife Science 252
Women's Studies 200
WRUF (Radio Station) 5
WUFT (Educational Television) 5

Zoology Courses 322

University of Florida
CIVIUM IN MORIBUS REI PUBLICAE SALUS
1853